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ABSTRACT

The junior high INFOE (Information Needed For Occupational Exploration--In Depth) program adds career concepts and an occupational information system to a K-14 career information program. The guide, designed for grades 7-9, contains units covering introductory activities and information on careers and job titles for 8 of the 15 career clusters. A proposed pilot study and evaluation and the description of the overall K-14 program are discussed. The seventh grade clusters are agri-business and natural resources, business and office, communications and media, and construction. Eighth grade students study health, marketing and distribution, public services, and transportation. Ninth grade students review all eight clusters. The key to the INFOE system is the INFOEscript, a five-page career brief written for each job title that is reproduced on microfilm aperture cards. General suggestions for the implementation of INFOE and the directions for using the materials for each grade level are presented. Learning activities have been developed for various subject areas. The alphabetical listing and descriptive information on vocational programs, interest inventories for the three grades, inventories of career clusters and job titles for both seventh and eighth grades, and word jumbles and crossword puzzles for the three grades are appended. (JB)

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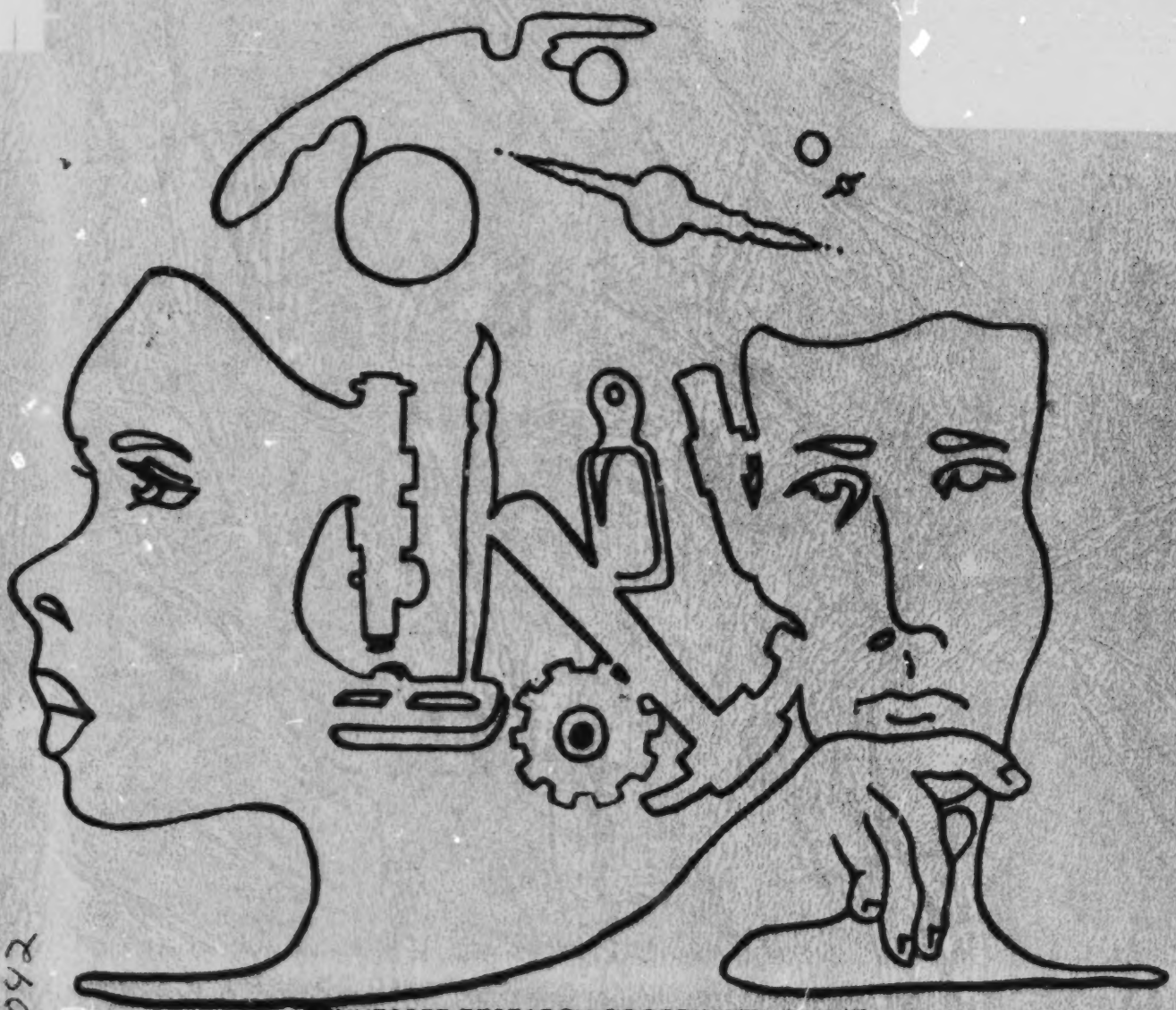

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GUIDE TO
JUNIOR HIGH INFOE

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INTRODUCTION

Junior High INFOE (Information Needed For Occupational Exploration - In Depth) is one of the four components of an occupational information system for grades K-14. For an overall view of the proposed K-14 model, see page 2.

Junior High INFOE is designed to provide seventh, eighth, and ninth grade students with in depth exploration of career clusters, job titles and major vocational programs. The key to Junior High INFOE is the career brief, a five-page description of specific occupational titles and of career clusters. This five-page brief will be reproduced in the form of a microfilm aperture card. In addition to the career briefs, four-page vocational program briefs which describe the vocational programs offered in Tennessee are provided in the form of microfilm aperture cards.

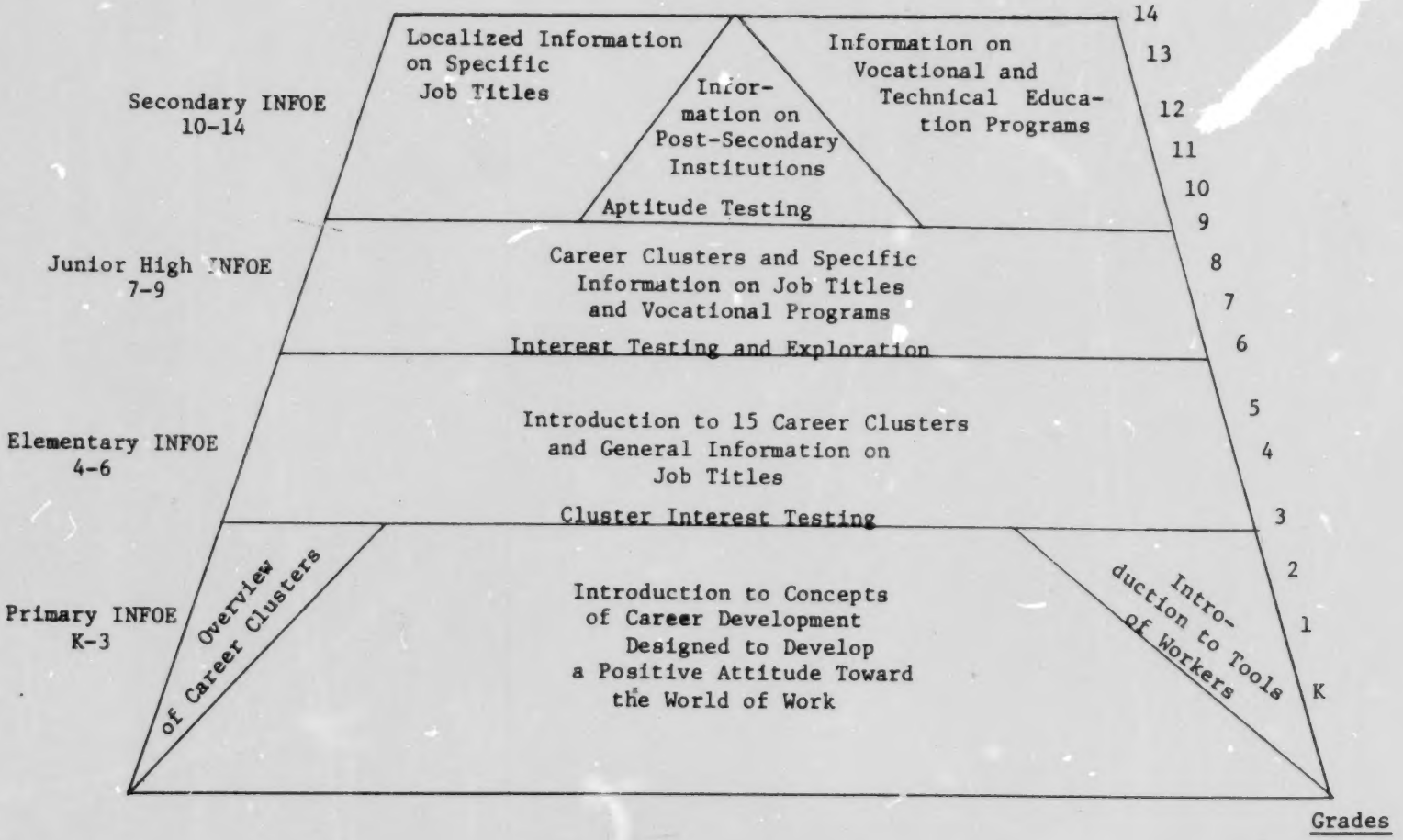
The completed Junior High INFOE kit will consist of information on 15 career clusters, information on 360 job titles, information on 50 vocational programs, a pin-sort interest exploration deck and a teacher-counselor's guide which explains how to use the kit. During the pilot study materials for a total of eight career clusters (a total of 192 job titles) will be tested in selected schools.

Conduction of the Pilot Study

The Junior High INFOE pilot study will be conducted during the period of February 17, 1975, to May 15, 1975. The purpose

MODEL FOR K-14 INFOE

(INFORMATION NEEDED FOR OCCUPATIONAL EDUCATION)



of the pilot study is to provide evaluation data to be used in making the INFOE materials more effective.

In order to evaluate the INFOE materials, teachers and/or counselors will be asked to complete a questionnaire on their reactions to the use of the materials. In addition, students will be tested in May on their knowledge about the world of work. For comparison purposes, a group of students (control group) who have not used the materials will be tested. Therefore, the participation of a neighboring school to serve as the control for each participating school will be needed.

The project staff will be making on-site visits to participating schools during March and April. At least one visit will be made to each school for the purpose of obtaining informal feedback from teachers, counselors, and students on the use of the INFOE materials. In addition, visits will be made in May for the purpose of administering reaction questionnaires to teachers and job knowledge tests to students.

THE JUNIOR HIGH INFOE MATERIALS

Junior High INFOE (Information Needed For Occupational Exploration - In Depth) is a career information system designed to help students explore the world of work.

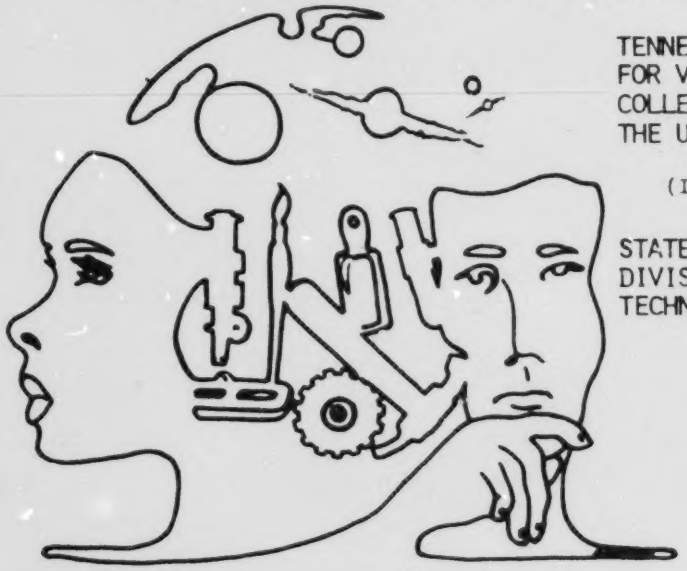
To make this exploration systematic, INFOE uses the cluster approach. Common work areas are grouped into one of the fifteen career clusters identified by the U.S. Office of Education. Each cluster is then broken down into small groups of closely related careers. The smaller groups within each cluster are called job families. INFOE shows this relationship between the job families in the career clusters by the picture of a tree and its fruit. The tree represents the large career cluster and the fruit depicts the job families. Each cluster in INFOE is introduced with the cluster tree and its job families.

For the pilot study of Junior High INFOE eight of the fifteen U.S.O.E. career clusters have been selected. The seventh grade clusters are Agri-Business & Natural Resources, Business & Office, Communications & Media, and Construction. Eighth grade students will study the Health, Marketing & Distribution, Public Services, and Transportation clusters. Ninth grade students will review all eight clusters.

Each cluster consists of 25 cards; a cluster introduction and 24 job titles. The key to INFOE is the INFOEscript, a five-page career brief written for each job title (see attached example on page 5). Each career brief is reproduced photographically on a microfilm aperture card. The aperture card is a computer card

INFOE

INFORMATION NEEDED FOR OCCUPATIONAL EXPLORATION--IN DEPTH



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FOR VOCATIONAL EDUCATION
COLLEGE OF EDUCATION
THE UNIVERSITY OF TENNESSEE

(In Cooperation With)

STATE DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL
TECHNICAL EDUCATION

D.O.T. 379.168

WILDLIFE OFFICER

WILDLIFE OFFICERS ENFORCE LAWS SO WILDLIFE IS PROTECTED. THIS WILDLIFE INCLUDES BIRDS, FISH, AND ANIMALS. WILDLIFE OFFICERS ALSO CHECK ON REPORTS OF FISH AND GAME LAW CRIMES.

PERSONAL TRAITS

YOU SHOULD:

*BE ABLE TO GET ALONG WITH ALL TYPES OF PEOPLE
*BE KIND TO ANIMALS
*BE ABLE TO CARRY OUT THE LAWS OF THE AREA

PHYSICAL TRAITS

YOU SHOULD:

*HAVE GOOD EYESIGHT
*HAVE GOOD USE OF HANDS, FINGERS, AND ARMS
*BE IN GOOD PHYSICAL CONDITION

REQUIREMENTS FOR THIS JOB

ABILITIES

YOU SHOULD:

*BE ABLE TO MAKE QUICK DECISIONS
*BE ABLE TO THINK FOR YOURSELF
*BE ABLE TO WORK ALONE

INTERESTS

YOU SHOULD:

*BE INTERESTED IN NATURE AND OUTDOORS
*BE INTERESTED IN WILDLIFE

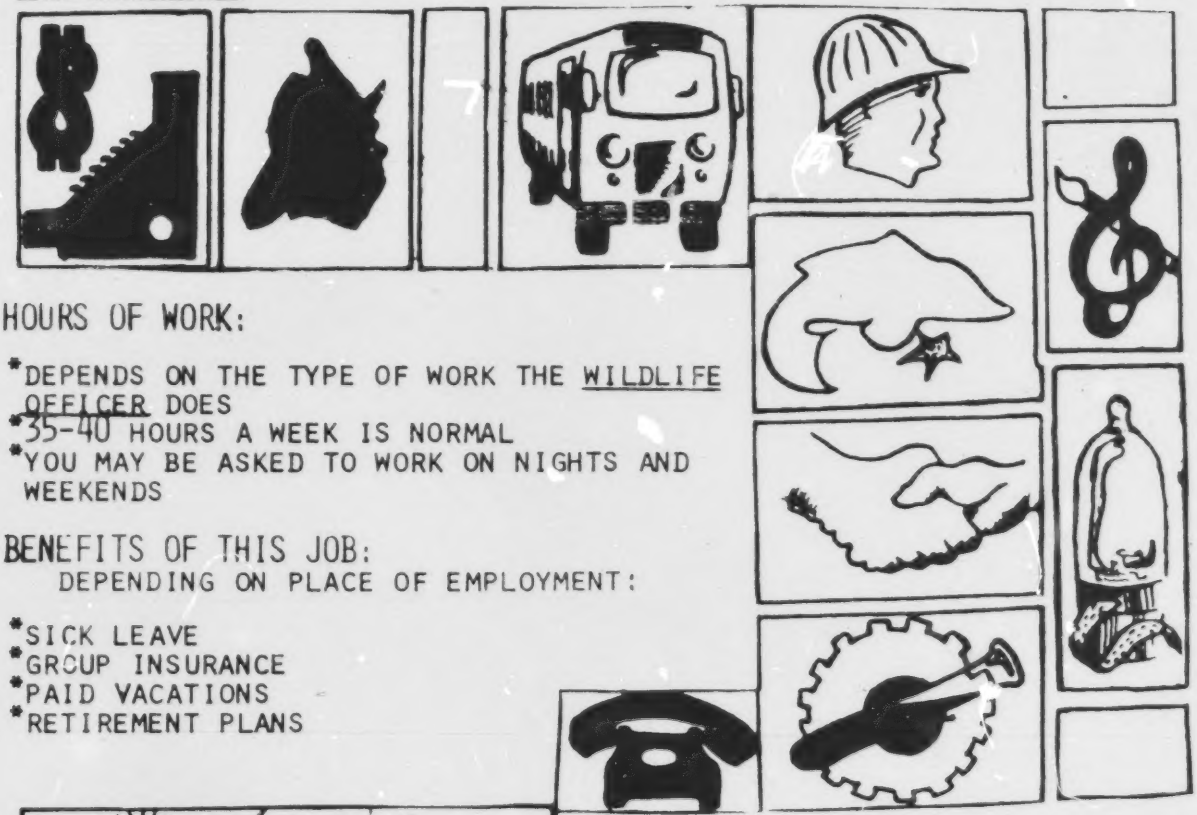
MORE ABOUT THE JOB

*THE WILDLIFE OFFICER MAY:

*ENCOURAGE HUNTER SAFETY TRAINING

*MAKE SPEECHES AT SCHOOL GROUPS

*CHECK ON PEOPLE HUNTING AND FISHING



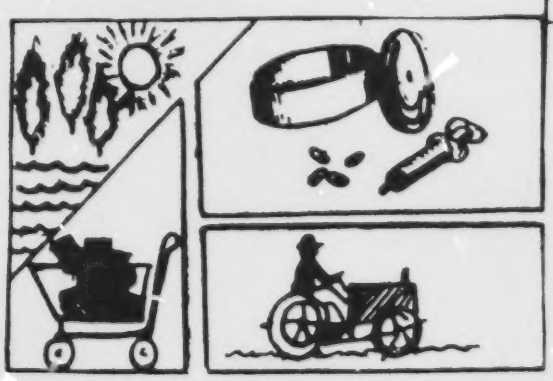
HOURS OF WORK:

*DEPENDS ON THE TYPE OF WORK THE WILDLIFE OFFICER DOES
*35-40 HOURS A WEEK IS NORMAL
*YOU MAY BE ASKED TO WORK ON NIGHTS AND WEEKENDS

BENEFITS OF THIS JOB:

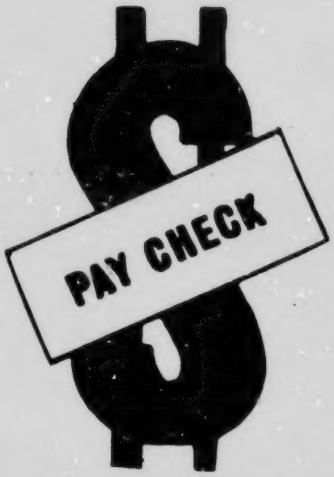
DEPENDING ON PLACE OF EMPLOYMENT:

*SICK LEAVE
*GROUP INSURANCE
*PAID VACATIONS
*RETIREMENT PLANS



YOU MUST BE ABLE TO:

*WORK OUTDOORS IN ALL KINDS OF WEATHER
*LIVE IN PLACES THAT LACK MODERN WAYS OF LIVING
*WORK SAFELY WITH GUNS



SALARY INFORMATION

MONTHLY SALARY RANGES

BEGINNING WORKER	EXPERIENCED WORKER
$714.00-$756.00	$777.00-$840.00

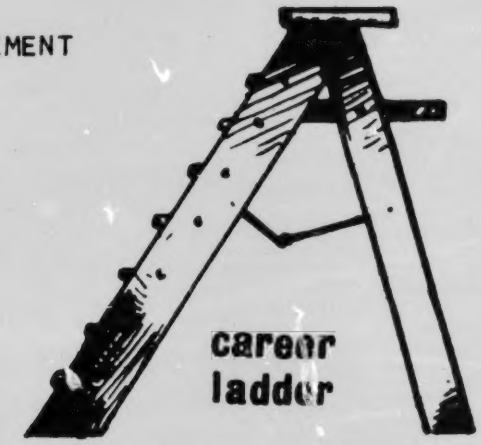
JOB OPPORTUNITIES

*THERE ARE A FEW OPENINGS WITH FEDERAL AGENCIES

OPPORTUNITIES FOR ADVANCEMENT

*OPPORTUNITIES ARE NOT VERY GOOD BECAUSE THE FIELD IS STILL NEW

*MORE TRAINING IS NEEDED FOR ADVANCEMENT



EDUCATIONAL PREPARATION AND TRAINING

EDUCATIONAL REQUIREMENTS

*A DEGREE FROM COLLEGE IN WILDLIFE OR RELATED FIELDS OF STUDY IS REQUIRED

COURSE OF STUDY:

*HIGH SCHOOL:
- *SCIENCE
- *ZOOLOGY
- *BOTANY

*COLLEGE:
- *WILDLIFE
- *FORESTRY
- *AGRICULTURE

EDUCATIONAL OPPORTUNITIES

*COURSES IN THE SCIENCES WILL BE HELPFUL, THESE COURSES ARE OFFERED IN COLLEGES AND UNIVERSITIES THROUGHOUT THE STATE

with a rectangular opening in which a frame of microfilm is mounted. Each job title contains the following five pages of information:

Page 1 - Description of the job title and an illustration portraying workers in each occupation.

Page 2 - Personal and physical traits, abilities and interests required for the occupation.

Page 3 - Additional information pertaining to each job title. Hours of work and benefits of the job are included.

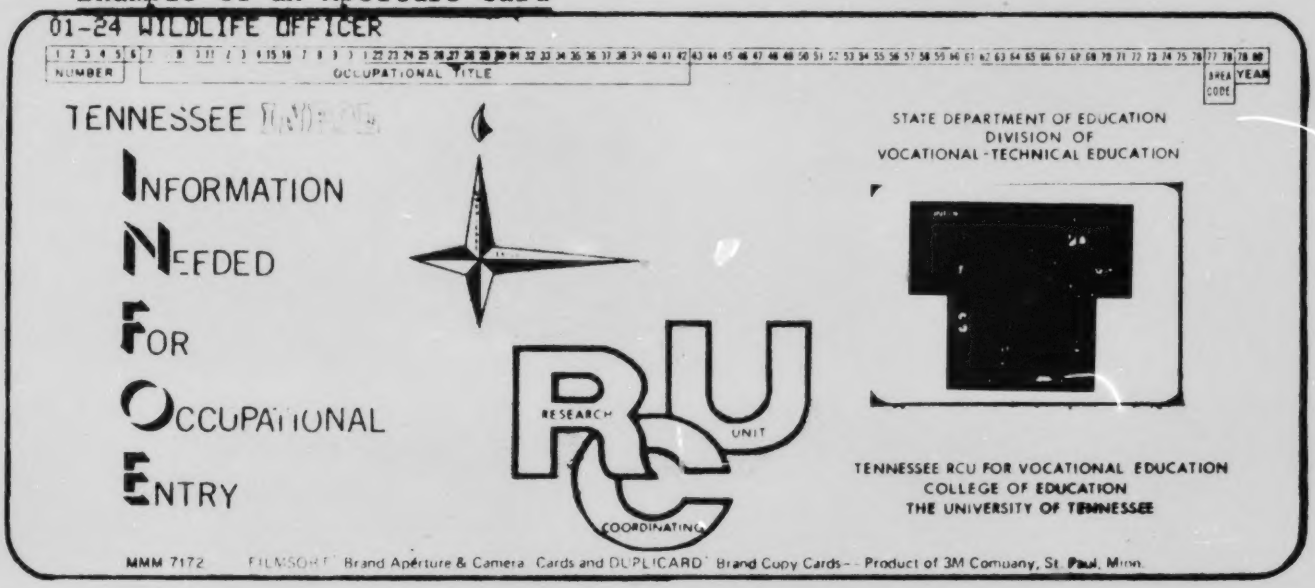
Page 4 - Salary ranges and opportunities available in the occupation.

Page 5 - Educational training and opportunities for the occupation.

The information punched in and typed on the aperture card consists of the following from left to right:

1. Two digit number - identifies cluster
2. Two digit number - identifies the job title number in the cluster
3. Title - name of the cluster or job title

Example of an Aperture Card



To supplement the career deck, a Program Offering Deck which provides information on vocational programs offered in Tennessee is provided.

The Program Offering Deck is filed alphabetically. The information punched in and typed on the aperture card consists of the following from left to right:

1. Two digit number - identifies vocational program number
2. Title - name of the vocational program

Each vocational program is presented in a four-page format (see attached example on page 12). The Program Offering INFOE-script contains the following information:

Page 1 - Description of the program and its objectives.

Page 2 - Educational background needed to enter the program and instructor expectations.

Page 3 - The course of study for the program.

Page 4 - Educational opportunities and a list of careers for which the program will prepare a person.

Tennessee Research Coordinating Unit
for Vocational Education
College of Education
The University of Tennessee

In Cooperation With

State Department of Education
Division of Vocational
Technical Education

U.S.O.E. NONE

INFOE

INFORMATION NEEDED FOR
OCCUPATIONAL EXPLORATION-IN DEPTH

COMMUNICATION ARTS
RADIO AND T.V. BROADCAST

COMMUNICATION ARTS WITH EMPHASIS ON RADIO AND T.V. BROADCASTING PREPARES STUDENTS FOR CAREERS IN MASS MEDIA - RADIO, TELEVISION, FILMS, RECORDING AND PRINT JOURNALISM. STUDENTS GET A GENERAL INTRODUCTION TO ALL THE AREAS.

OBJECTIVES OF COURSE

THE GRADUATE OF A COMMUNICATION ARTS PROGRAM SHOULD BE ABLE TO:

- *OPERATE AUDIO AND VIDEO RECORDING EQUIPMENT
- *SUPERVISE RADIO PRODUCTION ACTIVITIES
- *DEVELOP RADIO AND T.V. PRODUCTION SCHEDULES
- *PERFORM MANY SIMPLE TASKS EXPECTED OF RADIO AND T.V. PRODUCTION PERSONNEL

EDUCATIONAL BACKGROUND NEEDED

THE FOLLOWING HIGH SCHOOL COURSES WILL PROVIDE THE STUDENT WITH A GOOD BACKGROUND:

- *BASIC MATH
- *GENERAL BUSINESS
- *ENGLISH
- *TYPING I, II
- *PHYSICAL SCIENCE

ADDITIONAL EDUCATION CAN BE OBTAINED BY ATTENDING A TECHNICAL INSTITUTE OR COMMUNITY COLLEGE WITH PROGRAMS IN ELECTRONIC ENGINEERING TECHNOLOGY.

INSTRUCTOR EXPECTATIONS

STUDENTS WILL BE EXPECTED TO:

- *ATTEND CLASS REGULARLY
- *HAVE A GOOD ATTITUDE TOWARD OTHER STUDENTS

COURSE OF STUDY

THE PROGRAM IN COMMUNICATION ARTS IS DESIGNED TO PROVIDE BACKGROUND FOR JOB ENTRY. DURING THE FIRST YEAR STUDENTS STUDY:

- *AUDIO CONTROL
- *VIDEO CONTROL
- *ADVERTISING AND NEWS WRITING
- *HISTORY OF BROADCASTING
- *THE FEDERAL COMMUNICATION COMMISSION
- *SPECIAL EFFECTS

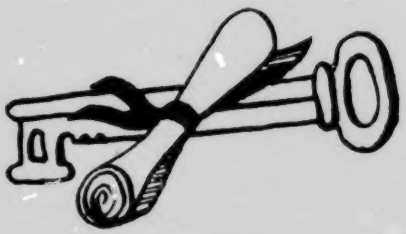
AFTER THE FIRST YEAR STUDENTS ARE INVOLVED IN ON-HAND EXPERIENCES IN RUNNING FAKE OR ACTUAL RADIO AND T.V. STATIONS.

DURING THE LAST YEAR STUDENTS LEARN MANY MANAGEMENT AND ECONOMIC RESPONSIBILITIES.

EDUCATIONAL OPPORTUNITIES

HIGH SCHOOL PROGRAMS IN COMMUNICATION ARTS ARE LIMITED TO SCHOOLS IN LARGE CITIES.

SEVERAL COLLEGES OFFER TRAINING AFTER HIGH SCHOOL GRADUATION.



THIS PROGRAM PREPARES YOU FOR THE FOLLOWING JOB TITLES:

SOME JOB TITLES IN THIS AREA ARE:

*RADIO & T.V. CONTROL ROOM TECHNICIAN

*RADIO & T.V. TRANSMITTER OPERATOR

*RADIO & T.V. CONTROL ROOM WORKER

*RADIO & T.V. SCRIPT ASSISTANT

*RADIO & T.V. MICROPHONE OPERATOR

*RADIO & T.V. ASSISTANT CAMERA OPERATOR

JUNIOR HIGH INFOE PINSORT

The Junior High INFOE Pinsort is a simplified system for helping students locate information on jobs which have requirements that are similar to the student's interests and abilities. The pinsort provides a technique by which students can select jobs based on educational requirements, worker requirements or relatedness to subject matter areas. Directions for using the pinsort are presented on the following pages.

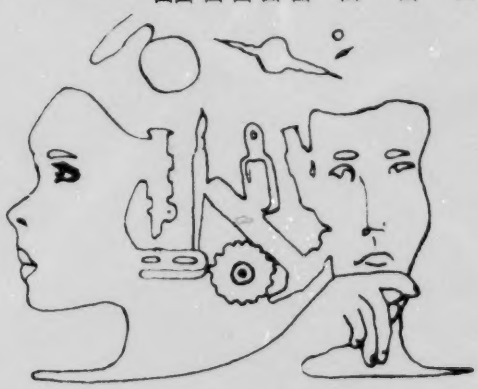
After a student has used the pinsort, the job titles which have been identified can be located in the Junior High INFOE Career Deck. Thus, a student can select job information to meet his own interests and abilities.

Example of Junior High INFOE Pinsort Card

01 24 WILDLIFE OFFICER

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

TENNESSEE INFOE
INFORMATION
NEEDED
FOR
OCCUPATIONAL
EXPLORATION - IN DEPTH



20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

PINSORT DIRECTIONS

STEP 1:

These questions are to help you find jobs which have requirements that are similar to your interests and abilities. Read the questions or statements then CIRCLE THE NUMBER IN FRONT OF THE RESPONSE THAT BEST FITS YOU, YOUR ABILITIES, YOUR INTERESTS, OR YOUR PLANS. After you have done this, there are further instructions. After you do this, see Step 2.

SECTION I

Select only one answer

HOW MUCH EDUCATION DO YOU PLAN TO COMPLETE BEFORE LOOKING FOR A FULL-TIME JOB?

16 I will not finish high school
17 I will finish high school
18 I would be willing to take as much as two years special training after high school
19 I will graduate from college

SECTION II

A PERSON CAN USUALLY DO A THING BEST IF THEY LIKE TO DO IT. SELECT FROM THE ITEMS THOSE THINGS YOU WOULD LIKE BEST ABOUT A JOB.

(Select as many answers as you wish, but do not contradict yourself.)

I would prefer work that is mostly:

20 Outside
21 Inside
22 Inside at a desk
23 Selling things or convincing people to my way of thinking
24 Alone or not involving people
25 Helping, advising, or assisting other people
26 Using facts and information to solve problems or develop ideas and products (This could include jobs in business, repair work, or some types of selling)
27 Organizing and using data (This would be gathering information and putting it together in jobs like construction, laboratory work, and some office jobs)
28 Copying, sorting, and putting things together (This could involve typing, copying, or following step-by-step plans to make things)
29 Using machines or equipment
30 Precision work (Jobs in mechanics, metal work, office machine repair, drafting, sewing, and some building trades)

SECTION III

WHAT JOBS ARE RELATED TO COURSES YOU TAKE IN SCHOOL?

(For example, if you want to see what jobs are related to what you will learn in English, circle 31, etc.)

31 Language Arts
32 Mathematics
33 Natural Science
34 Social Studies
35 Distributive Education
36 Office Occupations
37 Consumer and Homemaking Education (Occupational Home Economics)
38 Industrial Education (Trade & Industry)
39 Vocational Agriculture
40 Health and Physical Education
41 Art or Music
42 Foreign Language

STEP 2:

Now that you have answered the questions, you can use the information to select some jobs to explore. To sort for Section I place the deck of cards so you can see the numbers: 1-19 in the upper right hand part of the card. Take the sorter and run it through the hole numbered the same as the first answer you have circled. Now shake out the cards by moving the sorter sideways. (*Note: Any jobs that require more than four years of college will remain in the deck after sorting hole 19.)

After you have made a sort, use only the cards that drop out of the deck. Take off the cards that remain on your sorter and set them aside. Now using only those that dropped out of the deck, continue sorting for Sections II and III according to the numbers you have circled.

*REMEMBER--USE ONLY THOSE CARDS THAT DROP OUT OF THE DECK FOR EACH SORT

For the numbers 20-42 you will need to turn the cards over in the box to sort.

List the job titles that are sorted out so you can go to the INFOE occupational deck and read the job descriptions which match those selected by sorting your interests. If you wish further information, see your counselor or teacher. If you have no cards left on your sorter when you are through sorting, talk to your counselor about how you have answered the questions.

1. _____ 3. _____ 5. _____

2. _____ 4. _____ 6. _____

GENERAL SUGGESTIONS FOR IMPLEMENTING INFOE

This section is designed to present some of the general steps to follow in implementing the INFOE materials. More specific instructions on how to use the materials for each grade level are presented in other sections of this guide. The general steps you will need to follow are:

1. Orient yourself to the INFOE materials for your grade level and all information in this guide.
2. Learn how to operate the microfiche reader and demonstrate its operation to your students.
3. Practice using the pinsort and instruct students how to use it properly.
4. Have your students complete the interest inventory for their grade level (see Appendix B).
5. Work out a schedule for student use of the pinsort and microfiche reader.
6. Use the overhead transparencies to introduce students to each cluster.
7. Select learning activities to be used with your students. Attempt to integrate these learning activities in the normal subject matter teaching areas, e.g. math.

Keep in mind that suggestions given here do not apply equally well in all situations. Therefore, it will be necessary for you to use techniques which meet the needs of your students. Some students will be able to use the materials on an individual basis after being oriented to them, while other students can best benefit from group instructions.

DIRECTIONS FOR USING THE SEVENTH GRADE INFOE MATERIALS

This section is designed to give more specific information on the four career clusters included in the Junior High INFOE pilot study for seventh graders. A packet of overhead transparencies is provided with the INFOE materials to introduce students to the broad overview of each of the four clusters and the job families within each cluster. In addition, a summary of each cluster's content is given in this section to supplement the packet of overhead transparencies.

After instructors and students have become familiarized with the seventh grade INFOE materials, they can be applied to classroom situations. To aid instructors in integrating INFOE into the classroom, learning activities are presented which have been developed for various subject areas. To utilize INFOE to its fullest potential it is suggested instructors select learning activities from this section which can be applied to daily lessons.

The seventh grade INFOE aperture cards are designed primarily for individual student use. However, materials are also provided in the INFOE kit to assist you in making group use of the INFOE materials.

In Appendix A an inventory list of vocational programs is provided for interested seventh grade students. Descriptive information is also given on the basic course contents. It will be helpful if this material is easily available for student use when they explore the vocational deck.

Appendix B contains a simple interest inventory entitled "I Am Interested In. . ." This interest inventory may be duplicated and administered to students to assist them in selecting a cluster in conjunction with their interests to study. This is also the first step in using the pinsort materials. Instructions for using the interest inventory are included on the first page of Appendix B.

In Appendix C there are inventory lists of the career clusters (one through four) for seventh grade students. It will help if you duplicate these lists to be used individually as checklists for students to keep as a record of the jobs they have studied.

SEVENTH GRADE CAREER CLUSTERS

This section presents a brief description of the four seventh grade clusters. A description of the job families within each career cluster is also given.

Agri-Business and Natural Resources Cluster

The Agri-Business and Natural Resources Cluster includes careers which are concerned with providing food, clothing and shelter. Due to the increase in world population and many technological changes, the business of meeting the world's basic needs is complex. Thirty to forty percent of the United States' labor force works in some area of food production, processing and delivery of these food products. Millions of workers are also employed in the production of oil, ores, coal and minerals.

The Agri-Business and Natural Resources Cluster is divided into five basic job families. These families and their descriptions are:

1. Agricultural Production, Processing and Marketing

   This job family includes careers which are concerned with growing plants and animals for food and clothing. It also includes workers who process and market the products produced by farmers. Job titles in this family include commercial nursery worker, farmer, feed mill operator, general farm hand, and livestock caretaker.

2. Land, Water and Wildlife Management

   This job family includes careers which develop, grow, protect and manage our land, water and wildlife resources. Workers in this job family protect lakes, streams, rivers, fish, and wild animals. Job titles in this job family include forestry aide, landscape gardener, park naturalist and wildlife officer.

3. Mineral Resources

This job family is made up of workers who provide us with coal, ores, petroleum and raw building materials. Minerals mined or processed by these workers provide energy to heat and cool homes and to transport goods and people. Job titles in this family include geologist, miner, mines safety inspector, and quarry worker.

4. Research and Regulations

This job family includes careers concerned with agricultural research and with regulating the natural resources we use. Many workers in this family have jobs which identify and regulate how natural resources can be used. Some jobs enforce agricultural and natural resource laws. Most careers in this family are with the state or federal government. Job titles in this job family include agriculture commodity grader, agriculture engineering technician, biologist, lumber grader, plant and animal quarantine inspector, and soil technologist.

5. Service

The agricultural service job family includes careers that provide support services for farmers. Workers in this family provide consumable supplies, equipment, services and technical assistance to the people employed in agricultural production. Job titles in this family include county-agricultural agent, farm equipment mechanic, grain and feed product sales person, horseshoer, and veterinarian assistant.

Business and Office Cluster

The Business and Office Cluster is composed of all careers directly involved with operating an office or business. Workers in this cluster may keep office records, operate computers, run different office machines and equipment or manage office workers. Each of the four job families in this cluster deals with a particular function in keeping an office or business operating smoothly.

The four job families within the Business and Office Cluster are:

1. Accounting and Finance

Workers in this job family have systems for keeping, analyzing and explaining business accounts. These workers deal with financial transactions of businesses, banks, savings and loan companies, insurance companies, and the stock exchange. Job titles in this family include accountant, audit clerk, bank teller, bookkeeper, insurance adjuster, loans officer, and safe-deposit clerk.

2. Computer

Workers within this job family operate all types of business computer systems. Computer systems involve electronic methods of storing instructions, performing complex calculations, or compiling, correlating and selecting data. Job titles in this family include computer operator, computer programmer, data typist, key-punch operator, and systems analyst.

3. Management and Personnel

Workers in this family plan, direct, and control the operation of a business. These workers are involved with recruiting, interviewing, and hiring personnel. Job titles in this family include administrative assistant, assistant manager, personnel manager, public relations worker, and recruiter.

4. Secretarial Science and Office - Clerical

This job family includes workers who perform office or clerical duties. These workers may specialize in keeping records, taking dictation, composing, or editing. Job titles in this family include billing machine operator, clerk typist, file clerk, general secretary, office machine service worker, receptionist, and stenographer.

Communications and Media Cluster

The Communications and Media Cluster is composed of workers who provide ways of sharing ideas and information. Inventions such as the printing press, telegraph, telephone, radio, and television have caused a communication explosion. With this explosion many new careers have developed.

The four job families within the Communications and Media Cluster are:

1. Journalism

   There are many career opportunities in this job family for individuals interested in writing. Possible sources of employment are newspapers, magazines, trade publications, radio and television news departments, and book publishers. Job titles in this family include apprentice offset press printer, classified ad clerk, columnist, copy reader, foreign correspondent and newspaper reporter.

2. Motion Pictures and Broadcasting

   This job family includes careers involved in the creation and production of motion pictures. It also includes careers involved with the creation and production of recorded sound. Job titles in this family include film editor, make-up artist, motion picture projectionist, prop maker, and sound cutter.

3. Radio and Television Broadcasting

   This job family offers careers involved in the creation, production and transmission of radio and/or television programs. Job titles in this family include disk jockey, radio & T.V. controlroom technician, radio & T.V. script assistant, radio & T.V. service and repair worker, radio dispatcher, and television camera operator.

4. Telephone and Telegraph

   Workers in this job family are concerned with the installation, maintenance and operation of systems and equipment for wire and radio transmission of messages. Job titles in this family include cable splicer, information operator, PBX operator, telephone line worker, telephone service representative, telephone station installer, and teletype operator.

Construction Cluster

The Construction Cluster includes careers that are involved with the building of homes, offices, industrial plants, roads, bridges, airports, dams, and other structures. Occupational

opportunities within this cluster increase or decrease with the state of the economy.

The Construction Cluster is divided into the following four basic job families:

1. Building Materials

   This job family includes workers who use different types of building materials to construct buildings and other structures. These workers may use wood, metal, masonry or other materials. Job titles in this family include brick layer, carpenter, cement mason, construction materials equipment sales person, plumber, sheet metal worker, and welder.

2. Engineering and Support Services

   This job family includes workers who plan, design, and supervise the construction of buildings and other structures. Job titles in this family include architect assistant, building inspector, civil engineer, drafting worker, engineering aide, and surveyor.

3. Heavy Equipment Operations

   This job family consists of workers who operate and maintain various types of power driven construction machinery. Job titles in this family include air hammer operator, apprentice equipment mechanic, asphalt-paving machine operator and bulldozer operator.

4. Wiring and Finishing

   This job family includes careers that are involved in electrically equipping and/or finishing a structure. Job titles in this family include cabinetmaker, construction electrician, dry-wall applicator, electrical repair worker, finish carpenter, glazier and painter.

LEARNING ACTIVITIES

After students have been introduced to the INFOE materials and given time to explore the career deck they should be ready to progress to additional learning activities. Examples of learning activities for each of the four seventh grade clusters are given on the following pages. The learning activities have also been divided into appropriate subject areas.

Agri-Business and Natural Resources Cluster

I. Language Arts

A. Interview Sessions: Divide class into groups of four and have each group member select a different job title from the Agri-Business and Natural Resources Cluster. Have students share job information by conducting mock interview sessions. Three students can role play reporters and interview the other student. Have students change roles so that all will be interviewed.

B. Have students write riddles for the different job titles in the first cluster. Students can take turns reading the riddles to the class and the class can guess the different occupations.

II. History

A. Have students investigate and report on the changes in the roles of various job titles in Cluster 01. Example: farmer and horseshoer (early settlers vs. modern day).

B. Have students choose one of the job titles in the Agri-Business and Natural Resources Cluster. The students should then try to discover if this occupation applies to other countries, and if so, how it differs from our own country. Example: farmers in the U.S. vs. farmers in Japan. Oral or written reports should follow.

III. Mathematics

A. Have an open classroom discussion on the math used in a job like the Grain and Feed Sales occupation.

Relate this to what the math students are required to do in class. A possible exercise to accompany this would be to have students fill out and balance order blanks.

B. Discuss the common measurements used by agriculture occupations (bushel, peck, etc.). Tie this in with the possible conversion to the metric system in the U.S.

IV. Science

A. Explore the ways science would be helpful to many of the job titles in the first cluster.
Examples:
Livestock Caretaker - biology
Soil Technologist - physical science
Commercial Nursery Worker - botany

B. Have students select a job title and after reading the INFOEscript on it, have them decide if anything they have studied thus far in science would help them in this job.

V. General (Any Subject)

A. Word jumble (see example in Appendix D on Page 75).

B. Crossword puzzle (see example in Appendix D on Page 76).

*Have students compose their own word jumble or crossword puzzles.

C. Decision-making situation:
Dan works for a large grain and feed product company. The company hired him for a traveling sales position, and after working with the company for two years, Dan had higher sales than any of the other workers in his department. Because of his good sales record Dan's boss called him in for a meeting and gave him a large raise. During the meeting his boss suggested Dan sell his customers a low grade product and charge them the prices for higher grade products. Dan was promised a large bonus if he would do this. Dan said he would consider this offer and went home early to think things over. What possible solutions does he have to this situation? His biggest concern is he's not sure where he could find another job due to the rising unemployment rate.

Business and Office Cluster

I. Language Arts

A. Many of the jobs in the Business and Office Cluster require the ability to write a business letter. Show students a correct form for business letters and have them practice writing one.

B. Have a group discussion on "Who Needs English?" (spelling, grammar, reading, etc.). Relate this to jobs in the second cluster. Example: Why would a secretary need to spell well?

II. History

A. Have students discuss the following situation: Your history class has decided to produce a short skit on a current class topic. You are doing this as a money making project for a class party. The skit could be performed before the school and PTA. Decide what job titles from the Business and Office Cluster would be needed. Examples: Public Relations Workers, Bookkeeper, etc.

B. Have students trace the history of the computer. When was it invented? Who was responsible for its development? Students could make a time line on a bulletin board to trace the computer's development.

III. Mathematics

A. Arrange a field trip to a local bank and let students observe bank personnel at work (example: bank teller, loans officer, safe-deposit clerk).

B. Have students make reports on the history of money in the United States. Relate these reports to the job titles that work with money and need a math background (example: accountant, bank teller, audit clerk, bookkeeper, etc.).

IV. Science

A. A Poison Control Unit has decided to develop a new computerized method of listing all information on poisons. Discuss the jobs in the Business and Office Cluster which might be used to develop this system (example: computer programmer, systems analyst, data typist, etc.).

V. General (Any Subject)

A. Word jumble (see example in Appendix D on Page 75).

B. Crossword puzzle (see example in Appendix D on Page 76).

*Have students write their own word jumble or crossword puzzles.

C. Value Clarification Discussion:
Richard Smith was introduced to typing in eighth grade. It was taught as part of an interest course he took. Richard found that typing was something he enjoyed and was good at, so he took additional classes in it. After high school he decided to attend a vocational program that specialized in typing. Richard did very well in the vocational program, but upon graduation he had a hard time finding an office job. What might be the reasons? What alternatives does Richard have and why?

Communications and Media Cluster

I. Language Arts

A. Have students write a TV or radio commercial for one of their favorite products. Students can then make cue cards for the commercials and read them to the class.

B. Compose a list of new vocabulary words from the Communications and Media Cluster (example: air waves, transmit, time segment, documentary, drama, interference, etc.). After studying the list the class could play a game of Password.

II. History

A. Have students look into the history of the media forms we use today (television, newspapers, radio, movies, telephone, etc.). How have these changed and what might they be like in the future?

B. Have several students study the history of the telephone and conduct a skit on the telephone's invention (the first phone call). They should try to use simple costuming and props.

III. Mathematics

A. Have students take part in a mock TV production of the quiz show""Jeopardy." Have all of the categories math related (examples: "all numbers," "fractions," "decimals," etc.). Divide the class up to fill the different roles: contestants, announcer, judge (to decide who "rang-in first), score keeper, etc.

B. Have each student pick a job title from the Communications and Media Cluster. Discuss what they would do if they woke up one day and there were no more clocks or methods of telling time. How would they function in their occupation? Examples: Disk Jockey, Radio and TV Controlroom Technician, etc.

IV. Science

A. Who-What-Where Quiz Show (based on the TV quiz show). Select an announcer, three or four contestants and an audience (the remainder of the class).
Materials: compose a list of science topics with three questions (who-what-where) under each topic. Figure odds for each question according to the level of difficulty (example: 2:1 Who).
Rules: Each contestant is given a 200 point stake with which to work. When each topic is presented, the contestants must decide how many points they are willing to risk on the question they select (example: 25 points on the "Who" question). Figure scores according to the odds on the question.

B. "How does a telephone work?"
"How does a television work?" } Topics for reports and discussion
"How does a radio work?"

V. General (Any Subject)

A. Word Jumble (see example in Appendix D on Page 75).

B. Crossword Puzzle (see example in Appendix D on Page 76).

*Have students compose their own word jumble or crossword puzzles.

C. Decision-making situation:
Karen, a disk jockey, has been asked by a recording company to plug a record by playing it on the air frequently. This is not a very professional thing to do, but Karen would like to get a better job and feels that support from this record company would help her career. She must decide if she should go against her professional standards to get ahead in her job or be patient and wait for a regular promotion.

Construction Cluster

I. Language Arts

A. Have students bring the employment section from a daily newspaper to class. After discussing what is

included in the employment ads have students choose construction job titles and prepare "help wanted" ads for them.

B. Class Discussion: If you could not read or write, could you be a successful Plumber? (painter, brick layer, etc) What problems would you encounter on the job?

II. History

A. Have students report on the history of architectural changes in our country; from log cabins to skyscrapers. Also discuss how construction occupations have changed to meet these new architectural styles.

B. Divide class into groups of four-five and assign each group a foreign country and a job title from the Construction Cluster. Tell each group they are to construct an international building in their foreign country. Have each group list the adjustments they would need to make to work in a foreign country. Later have groups share their thoughts with the class.

III. Mathematics

A. In groups of four-five plan a simple house and then decide:

1) which construction job titles would be involved and how they would use math in their jobs

2) how to figure the amounts of materials needed to build the house

B. Group Discussion: Let each student assume the role of one of the job titles in the Construction Cluster and then pose the following questions: "What if you woke up tomorrow and forgot all the math you know?" What adjustments would you need to make for your job?"

IV. Science

A. Group Discussion: As a scientist you have decided to remodel your laboratory. Which of the job titles under construction would you need to contact and why?

B. Have students report on electricity and its influence on our lives. Relate the use of electricity to construction workers.

V. General (Any Subject)

A. Word Jumble (see example in Appendix D on Page 75).

B Crossword Puzzle (see example in Appendix D on Page 76).

*Have students compose their own word jumble or crossword puzzles.

D. Value Clarification:
A building inspector has found several construction flaws in a newly constructed building. It will cost the construction firm over 100 thousand dollars to repair these flaws. Do you think the construction company should be required to repair these flaws if the risk to human lives is only minimum?

DIRECTIONS FOR USING THE EIGHTH GRADE INFOE MATERIALS

This section is designed to give more specific information on the four career clusters included in the Junior High INFOE pilot study for eighth graders. A packet of overhead transparencies is provided with the INFOE materials to introduce students to the broad overview of each of the four clusters and the job families within each cluster. In addition, a summary of each cluster's content is given in this section to supplement the packet of overhead transparencies.

After instructors and students have become familiarized with the eighth grade INFOE materials they can be applied to classroom situations. To aid instructors in integrating INFOE into the classroom, learning activities are presented which have been developed for various subject areas. To utilize INFOE to its fullest potential it is suggested instructors select learning activities from this section which can be applied to daily lessons.

The eighth grade INFOE aperture cards are designed primarily for individual student use. However, materials are also provided in the INFOE kit to assist you in making group use of the INFOE materials.

In Appendix A an inventory list of vocational programs is provided for interested eighth grade students. Descriptive information is also given on the basic course contents. It will be helpful if this material is easily available for student use when they explore the vocational deck.

Appendix B contains a simple interest inventory entitled "I Am Interested In. . ." This interest inventory may be duplicated and administered to students to assist them in selecting a cluster in conjunction with their interests to study. This is also the first step in using the pinsort materials. Instructions for using the interest inventory are included on the first page of Appendix B.

In Appendix E there are inventory lists of the career clusters (8, 12, 14, 15) for eighth grade students. It will help if you duplicate these lists to be used individually as checklists for students to keep as a record of the jobs they have studied.

EIGHTH GRADE CAREER CLUSTERS

This section presents a brief description of the four eighth grade clusters. A description of the job families within each career cluster is also given.

Health Cluster

The Health Cluster consists of careers relating to medical and dental needs. With the increasing population and greater emphasis on health care there are many opportunities in the health field for workers at all levels.

The Health Cluster is divided up into the following four basic job families:

1. Dental Science Services

   This job family consists of careers relating to the treatment of teeth and gum problems and the prevention of their occurance. Job titles in this family include dental assistant, dental hygienist, and dental laboratory technician.

2. Hospital and Medical Office

   This job family consists of careers concerned with the operation of a hospital or medical office. Workers in this family may keep records, make appointments, or handle bills. Other workers may do administrative jobs by directing and managing other people to provide health services. Job titles in this family include admitting clerk, central supply aide, medical assistant, nurse's aide, radiologic technologist, and veni-puncture specialist.

3. Medical Professions

   This family includes professions which require special academic preparation within the medical field and licensure by medical boards. Careers in this job family provide direct medical care. Job titles in this family include licensed practical nurse, psychiatric technician, and registered nurse.

4. Medical Supportive Personnel

Workers in this job family are not necessarily involved directly with patient treatment. Careers in this area support the medical profession by providing laboratory research or diagnostic services and other services. Job titles in this family include ambulance drive, audiologist, dietitian technician, inhalation therapy technician, medical laboratory assistant, occupation therapist, operating room technician, ophthalmic lens grinder, orthopedic technician, pharmacy helper, physical therapist assistant, and speech therapist.

Marketing and Distribution Cluster

The Marketing and Distribution Cluster is composed of careers responsible for directing the flow of goods and services from producer to customer. There is a wide range of careers in the marketing field. Some careers are in management while others involve the performance of physical tasks.

The Marketing and Distribution Cluster consists of the following five job families:

1. Distribution

This family includes careers involved with the dispersion of goods and services from their source to the consumer. There are many career opportunities in this family for jobs with physical action. Job titles in this family include, coin-vending machine operator, packaging worker, shipping and receiving clerk, stock clerk, and warehouse worker.

2. Marketing, Management, and Research

This job family includes management careers that plan, organize, staff, direct, and control workers and materials in marketing fields. It also includes research workers who analyze economic trends, consumer needs, and general market conditions. Job titles in this family include credit manager and market research assistant.

3. Purchasing

Careers in this job family are concerned with identifying supply needs and finding sources of supply. Job titles

in this family include assistant buyer, importer-exporter, and stock broker.

4. Related Business Services

Careers in this job family provide marketing supportive services and perform clerical work. Workers in this family also arrange credit financing and insurance for marketing and distribution transactions. Job titles in this family include actuary, credit analyst, and insurance agent.

5. Sales and Sales Promotion

Careers in this job family create a demand for a product or service. In addition, it includes careers related to contacting or completing sales. Job titles include advertising sales person, apprentice exhibit fabricator, auctioneer, cashier, catalog order clerk, department store sales person, display artist, furniture sales person, grocery clerk, jeweler, and real estate sales person.

Public Service Cluster

The Public Service Cluster includes careers which are people oriented and which are located in local, state and federal government offices. These service oriented positions require a commitment to society and the task.

The Public Service Cluster consists of the following six job families:

1. Administration, Congressional and Regulatory Services

Careers in this family are concerned with administering government agencies, making laws, and regulating financial establishments. This job family also is concerned with public records, licensing, customs, and immigration. A junior federal assistant works in this job family.

2. Education

Careers within this job family are related to teaching, counseling, educational supervision, and extension education services. Job titles in this family include child day care aide, guidance counselor, kindergarten teacher, library assistant, teacher aide, and trade and industrial education teacher.

3. Post Office

This job family includes careers which collect, sort, process and deliver mail. Job titles in this family include mail carrier and post office clerk.

4. Protective Services

This job family includes careers which enforce laws or regulations which are designed to protect people and property from harm. Job titles in this family include armed forces, deputy sheriff, F.B.I. special agent, fire fighter, law enforcement clerk, and state trooper.

5. Public Utilities

Careers in this job family produce and distribute public utilities to the customer. Job titles in this family include garbage truck driver, gas plant operator, meter reader, and public works inspector.

6. Social Services

The careers in this job family are concerned with human service programs. These positions help people cope with our complex society. Job titles in this family include paralegal aide, peace corp volunteer, probation and parole counselor, rehabilitation counselor, and social worker.

Transportation Cluster

The Transportation Cluster involves all careers which take part in the conveyance of people and objects from one place to another. In an industrial society like ours, an effective system of transportation is vital. This cluster includes the transportation of raw materials, fuel and workers, as well as the transportation network for business and pleasure traveling.

The four job families which make up the Transportation Cluster are:

1. Airborne Transport

Careers in this job family provide the piloting, navigating, and support services for all forms of air transportation. Job titles in this family include air

traffic controller, aircraft fuel service mechanic, aircraft structure assembler, airframe and power plant mechanic, airline flight attendent, airline pilot and co-pilot, airline ticket agent, and aviation maintenance inspector.

2. Highway and Rail Transport

This job family includes careers relating to automobile, bus, taxi, truck, and train services. Workers in this family include mechanics as well as drivers of land based transportation vehicles. Job titles in this family include auto body repair worker, auto mechanic, auto painter, auto sales person, auto upholsterer, car rental representative, intercity bus driver, long-haul truck driver, motorcycle mechanic, railroad locomotion engineer, school bus driver, service station attendant, and taxicab driver.

3. Pipeline Transport

Careers in this job family are related to the supervision, repair and operation of pipeline transportation of solids or liquids. The pipeline family is the smallest and most specialized of all the transportation job families. A pump worker works in this job family.

4. Water Transport

Careers in this job family are involved with ocean and inland water transportation. This family includes workers who pilot, maintain, load, and unload all types of watercrafts. Job titles in this family include longshore worker and traffice rate clerk.

LEARNING ACTIVITIES

After students have been introduced to the INFOE materials and given time to explore the career deck they should be ready to progress to additional learning activities. Examples of learning activities for each of the four eighth grade clusters are given on the following pages. The learning activities have also been divided into appropriate subject areas.

Health Cluster

I. Language Arts

A. Compose a list of vocabulary words from the Health Cluster (example: orthopedic, laboratory, dietitics, etc.). Let each student (or groups of two) draw a vocabulary word from a box and act out the word for the class.

B. Have a "Spelling Bee" contest using a vocabulary word list relating to the Health Cluster.

II. History

A. Have students choose famous people from the field of health careers and prepare reports for the class. Include the influence these people have had on our health standards today. Afterwards have students prepare a "Who's Who In the Health Field" bulletin board from their reports.

B. Working in small groups have students research the history and development of the following health areas: medicine, the hospital system, dentistry, nursing, etc.

III. Mathematics

A. Since health needs are a good portion of one's budget have students investigate the cost for varying medical needs (example: hospital rooms, dental costs, etc.). Next have the class discuss ways of cutting and budgeting medical costs.

B. Discuss the use of the metric system with prescription drugs. What are the different units used to measure the drugs?

IV. Science

A. Discuss the different blood types and have students look at different samples under microscopes.

B. Have each student select a different job title from the Health Cluster and relate the different areas of science that would apply to the occupation.
Example:

Dietitian Technician - chemistry
Orthopedic Technician - physics
Licensed Practical Nurse - biology

V. General (Any Subject)

A. Word Jumble (see example in Appendix F on Page 84).

B. Crossword puzzle (see example in Appendix F on Page 85).

*Have students make their own word jumble or crossword puzzles.

C. Self-Exploration:
Read the following directions to students and have them list their abilities and limitations.
1. Abilities are what you can do. They are part of your personality and will help you choose the direction of your career exploration. Make a list of things that are "easy for you to do."
2. It is just as important to be aware of what you cannot do well. Make a list of things that are "hard for you to do."
3. Have a class discussion on the importance of recognizing abilities and limitations. Discuss ways of improving limitations.

Marketing and Distribution Cluster

I. Language Arts

A. You are a Real Estate Sales Person and must prepare a description of a house you wish to sell. Choose a house you are familiar with and prepare a description.

B. As an Advertising Sales Person prepare an advertising campaign for a new product you wish to introduce to the market.

II. History

A. As an Auctioneer of antiques would you need any background in history? Why or why not?

B. Have the class prepare a display on the changes that have taken place in the advertising field. Prices could be compared as well as advertising techniques.

III. Mathematics

A. Materials: catalog order books
ditto of catalog order blanks
Have each student select an item from a catalog. Then have students fill-out order forms, including cost, tax, shipping rates, etc. Next have students decide which job titles might be involved with their purchases (example: catalog order clerk, packaging worker, and stock clerk).

B. In groups of two have students look into the different job titles under Marketing and Distribution and discuss how math would be used by each of these workers. Report back to the class.

IV. Science

A. As a chemist you would like to order some new chemicals and equipment. Which job titles in the Marketing and Distribution Cluster might you come in contact with during this purchase?

B. You have invented a new microscope for lab work and would like to market it. Could any workers in the Marketing and Distribution Cluster be helpful to you? Why?

V. General (Any Subject)

A. Word Jumble (see example in Appendix F on Page 84).

B. Crossword puzzle (see example in Appendix F on Page 85).

*Have students compose their own word jumble or crossword puzzles.

C. Decision-making exercise:
Jane is working in a local department store as a sales clerk. Her department manager has offered Jane a position as an assistant buyer. Jane can't decide if she should take the position because it will interfere with her schooling. What considerations should Jane have in mind when making her decision?

Public Services Cluster

I. Language Arts

A. As a Library Assistant you have been asked to develop an organized method for filing the library periodicals. What new plan would you use?

B. Reporter-Interview Session:
Fran Johnson is an agent for the F.B.I. and is going to be interviewed by several newspaper and T.V. reporters. Have students role play this situation and then write up their interviews as newspaper articles or T.V. reports.

II. History

A. You are going to be a Peace Corps Volunteer and wish to learn more about the country you will be stationed in. Select a country and report to the class on the areas in the country the Peace Corps would be working with.

B. The Judicial branch of our government involves many Public Service Workers. As a class plan a court trial using the following: Judge, Probation and Parole Counselor, Paralegal Aide, Deputy Sheriff, State Trooper, Law Enforcement Clerk, etc.

Situation: A parolee is found violating parole regulations. Improvise from here relating trial to some pertinent issue in current events.

III. Mathematics

A. As a kindergarten teacher you want to teach your class to count and work with numbers. How can you accomplish this task?

B. Research the importance of mathematics in the Postal Service. What forms of math would be needed by postal workers?

IV. Science

A. Why would it be important for a fire fighter to have some background in science?

B. In what ways would science be pertinent for an F.B.I. investigation?

V. General (Any Subject)

A. Word Jumble (see example in Appendix F on Page 84).

B. Crossword puzzle (see example in Appendix F on Page 85).

*Have students write their own word jumble or crossword puzzles.

C. Plan a class field trip. Suggestions:
Court House
Police Station
City Hall
U.S. Post Office
Armed Forces Office

Transportation Cluster

I. Language Arts

A. Have students divide up into small groups to play games of scrabble. Tell students to form words relating to the field of transportation.

B. Have students play "Hangman" in small groups. One student in the group selects a word relating to transportation and draws a space for each letter in the word. Other students take turns guessing the letters. For each incorrect letter the first student draws one part to the hangman.

II. History

A. Have students report on the historical development of modes of transportation (example: Wright brothers first airplane compared to today's jets).

B. Discuss the influence of transportation on wars.

III. Mathematics

A. Alice wants to be a taxicab driver but she is very poor in math. Will she be successful? Why or why not?

B. How would math influence the work of a traffic rate clerk? What weights, measures, figures, etc. would be needed for this job?

IV. Science

A. If you were an Airline Pilot or Co-Pilot would you need any background in science? If so, what areas? (example: physics, meterology, etc.)

B. Discuss the principles behind a gasoline engine. Explain the processes involved in running a motor vehicle.

V. General (Any Subject)

A. Word Jumble (see example in Appendix F on Page 84).

B. Crossword puzzle (see example in Appendix F on Page 85).

*Have students compose their own word jumble or crossword puzzles.

C. Decision-making situation:
Directions: Divide the class in groups of five and give each group a copy of the following situation. Read the situation to the class and then tell them:
1) Each group will have 20 minutes to come to a group decision.
2) The decision of the group should be unanimous.
3) If there is any disagreement within your group then the group should try to resolve the problems.

Situation: Mr. Logan is a family man in his late 50's. His children range in age from 13 to 20, so there is a need to budget for college tuition out of his salary. Mr. Logan is presently working for a regional airline company as a pilot making $20,000 a year. He has held this position for 15 years and needs to work another 5 years before retiring. (He has an excellent retirement plan.) Mr. Logan enjoys his job although he is away from his family more than he would like. Recently Mr. Logan was offered a job as a Public Relations Worker at the local airport with a salary of $17,500 a year. He would also have to give up his retirement fund. Mr. Logan is very interested in accepting this position because it would be a more relaxed job and would allow him more time with his family. What decision would you make if you were in his position considering 1) his college age children and 2) the present economic situation. Share your group decision with the class.

DIRECTIONS FOR USING THE NINTH GRADE INFOE MATERIALS

This section is designed to give more specific information on the eight career clusters included in the Junior High INFOE pilot study for ninth graders. (*Note: Ninth grade students will review the four seventh grade clusters, 1 through 4, and the four eighth grade clusters, 8, 12, 14, 15.) Packets of overhead transparencies are provided with the seventh and eighth grade INFOE materials to introduce students to the broad overview of each of the clusters and the job families within each cluster. In addition, summaries of the cluster's contents are given in the seventh and eighth grade sections starting on page 22 for cluster 1 through 4, and page 36 for clusters 8, 12, 14, 15. These act as supplements to the packets of overhead transparencies. Since ninth grade students will review all eight clusters, both the overhead transparencies and written cluster summaries should be applied to this grade level.

After instructors and students have become familiarized with the ninth grade materials they can be applied to classroom situations. To aid instructors in integrating INFOE into the classroom, learning activities are presented which can be used in a variety of subject areas. To utilize INFOE to its fullest potential it is suggested instructors select learning activities from this section which can be applied to daily lessons.

The INFOE aperture cards are designed primarily for individual student use. However, materials are also provided in the INFOE kit to assist you in making group use of the INFOE materials.

In Appendix A an inventory list of vocational programs is provided for interested ninth grade students. Descriptive information is also given on the basic course content. It will be helpful if this material is easily available for student use when they explore the vocational deck. ""

Appendix B contains a simple interest inventory entitled "I Am Interested In. . ." This interest inventory may be duplicated and administered to students to assist them in selecting a cluster in conjunction with their interests to study. This is also the first step in using the pinsort materials. Instructions for using the interest inventory are included on the first page of Appendix B.

In Appendices C and E there are inventory lists of the eight career clusters involved in the pilot study. It will help if you duplicate these lists to be used individually by students as checklists of the jobs they have studied.

LEARNING ACTIVITIES

After students have been introduced to the INFOE materials and given time to explore the career deck they should be ready to progress to additional learning activities. Examples of activities to be used at the ninth grade level are given on the following pages.

I. Become aware of the Social Security system and application procedures.

A) Have a student do a brief report on the history of the Social Security system.

B) Explain the role and function of Social Security.
   1) Stress the simplicity of obtaining a social security card.
   2) Stress the complications involved in obtaining a card after age 18 (proof of age through birth certificate or driver's license).

C) Distribute copies of Social Security application forms and discuss how to fill them out and submit them (mimeograph copies from form on page 56).

II. Prepare a personal data sheet or resume'.

A) Let students discuss what they feel would be important information to place on a resume'.

B) Have students prepare a personal resume'. Use the following guidelines to help students include correct information:

A resume' or data sheet should consist of a minimum number of pages (one page preferably), neatly typed, and should contain the following information:

1. Name, age, height, weight, address and telephone number.
2. Social security number, marital and military status.
3. Educational background; including the names and addresses of all schools attended, years in which entered and in which graduated, courses of study and major subjects.

4. Work experience; including descriptions of part- or full-time employment, names and addresses of employers, dates of employment, names and addresses of immediate supervisors, and starting and ending rates of pay.
5. Extra-curricular activities; including school and community clubs, programs in which participated, and any offices held or honors received.
6. Leisure-time activities and interests; including hobbies and sports.
7. A list of references; including teachers, former employers and adult friends (this list should include only individuals whom it is felt certain would be willing to make adequate recommendations concerning work performance, scholarship, and character). The list should show full names, titles, addresses, telephone numbers, and if possible, occupations and place of employment.
8. Although not necessary, it is a good idea to clip or paste a small recent photograph of yourself to the resume'.

III. Proper etiquette for going on a job interview.

A) Have an open class discussion on: "What should you do when going for a job interview?".

B) Suggested guidelines:

1. Arrange an interview by telephone.
   a. Speak clearly.
   b. Use good manners.
   c. State your name and why you are calling.
   d. Be brief.

2. Preparing for the job interview.
   a. Check your appearance. Be neat, clean in your dress. You should not overdress.
   b. Go alone for the interview. Do not take friends or relatives with you.
   c. Be prompt.
   d. Take a pen and paper with you and a resume' of your personal information to aid in filling out an application form.

3. The job interview.
   a. Introduce yourself to the interviewer and wait to be asked before you sit down.
   b. Sit straight but relaxed. Do not slouch in the chair, yawn, or look bored.
   c. Do not smoke, chew, or eat during the interview.
   d. Speak clearly and with confidence, answering all questions. Do not talk too much, but be friendly.

e. Look the interviewer straight in the eyes when he talks to you.
f. Don't discuss your personal problems, such as unpaid bills.
g. If you have any questions about the job ask them (example: company benefits).
h. Be polite and courteous, even if you don't get the job.

*Taken from Tennessee Department of Employment Security, "Your Job Interview"

IV. Travel Log

Goal: To become aware of the inter-relationship between jobs, to become aware of all the aspects of budgeting when traveling.

Objective: To become aware of all the jobs which are involved in traveling.

Method: 1) Place the class into groups of two or three.

2) Have each group decide on a place they would like to take a vacation (any place in the world may be selected but once the selection is made it is final).

3) As a group, they should investigate all the cost aspects of this vacation. For example:

a. If you're traveling outside the continental United States, you must investigate the need for passports and vaccinations.
b. You must determine the basic method of transportation (the cheapest and/or best method of transportation).
c. You must determine the cost of your accomodations (hotels, camping, hostels, etc.).
d. You must determine the cost of any entertainment or recreation (tours, theatre, side trips, etc.).
e. You might want to investigate the weather conditions so that you know what clothing to wear and pack.
f. Lastly, you must determine a total budget for the trip.

4) You must investigate all jobs which are enccuntered in your plans and what jobs you might encounter on the trip.

(For example: Travel Agent, Airplane Pilot, Service Station Attendant, Loans Officer, Park Naturalist, Nurse, Information Operator, Importer-Exporter, Mail Carrier, Car Rental Representative, etc. Hopefully, you will come up with a much more extensive list.)

5) Use any methods you need to obtain all the information (examples: encyclopedias, magazines, newspapers, travel agencies, telephone calling, letter writing, etc.).

6) Lastly, your group should make both a written and oral report. All groups will present to the class their "vacation plans."

V. Impact of today's economy on the eight job clusters.

A. Divide the class into eight groups.

B. Assign each group one of the eight job clusters.

C) Give each group time to review and become familiar with their assigned cluster.

D) Ask each group to discuss and determine the impact of today's economy on their cluster. They should prepare a report which will be presented to the class.

1) Resources: Newspapers, magazines, labor market trends, interviews with people in this job cluster, etc.

2) Report techniques: Class discussion, posters, bulletin boards, role playing, etc. (Any method that will demonstrate the groups' findings.)

E) Draw some conclusions about impact of today's economy on these eight clusters.

VI. Interdependency of workers is necessary.

Objective: To let students realize how dependent they are on each other in the performance of this task.

Directions to Instructors:

*Note patterns on page 55. Enlarge each square to form a 6" by 6" square and duplicate (enough so each group will have a copy of all five squares). Place groups of the five squares together. Next cut out the squares and place all pieces marked A in envelope A, all pieces marked B in envelope B, all pieces marked C in envelope C, etc. (Each

A envelope should contain three pieces, B envelope two pieces, C envelope two pieces, D envelope five pieces, E envelop three pieces). Each group of five students should have a set of five envelopes.

*At the start of the activity each member of the group should have one of the five envelopes. Each group should have a judge assigned to it. Any class member not participating in a group or serving as a judge can be an observer.

Instructions to Class: On the signal to begin your group task is to form five squares of equal size. The task will not be completed until each of the group members has a perfect square (the same size as held by the other group members).

The rules your group must work by are:

1) No member may speak.
2) No member may ask another member for a card or in any way signal another person to give him a card.
3) Members may, however, give cards to other members.

All observers must also remain silent.

Instructions to the Judges: Your job is to make sure each group observes all the rules.

1) No communicating - no talking - pointing, etc.
2) Group members may give pieces to other participants but may not take pieces.
3) Group members cannot throw pieces into the center for others to take, they have to give the pieces directly to one individual.

Do your best to strictly enforce these rules. For each violation a judge should give a 15 second penalty.

Instructions to Observers: You may want to look for the following:

1) Who is willing to give away pieces of the puzzle?
2) Did any of your group finish and then just sit back and watch his teammate struggle to get their squares completed?
3) Was there any organization in your group?
4) Was there any frustration or anxiety in your group--Who was pulling out their hair?
5) Was there a point when the group began to cooperate and work as a unit?
6) Were all group members really thinking about putting the pieces together?

7) Did anyone try to break or violate the rules by talking or pointing as a means of helping members solve their puzzle?

Remember to remain quiet.

Final Instructions: The group that finishes in the least amount of time (after penalties have been added, if there are any) will be the winners.

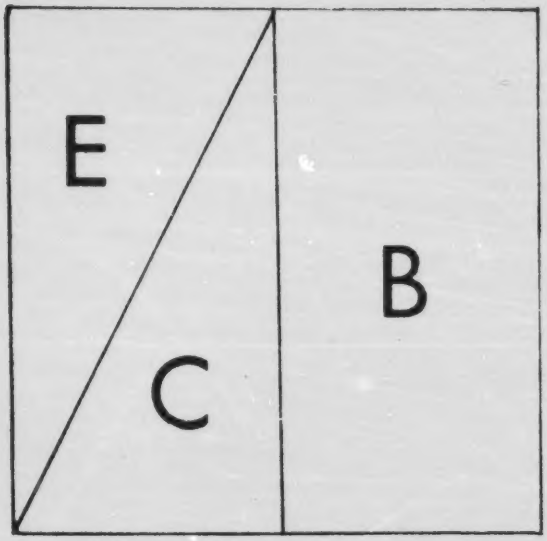
*(Taken from Texas View, Career Education Activities, Level 3, Region XIX, Education Services Center, El Paso, Texas, pp. 17-27)

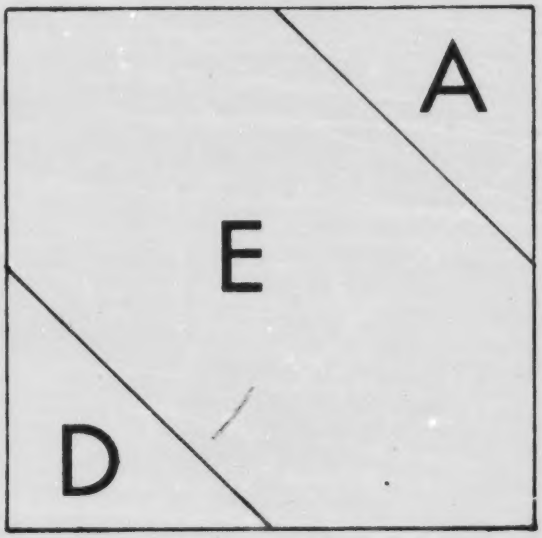
VII. Word Jumble (see example in Appendix G, on page 88).

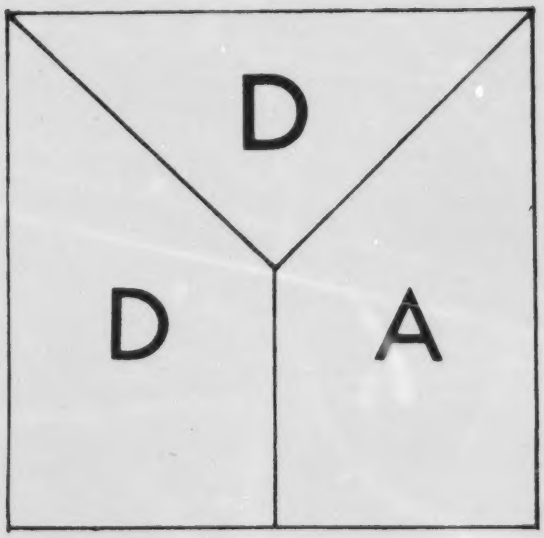
Crossword puzzle (see example in Appendix G on page 89).

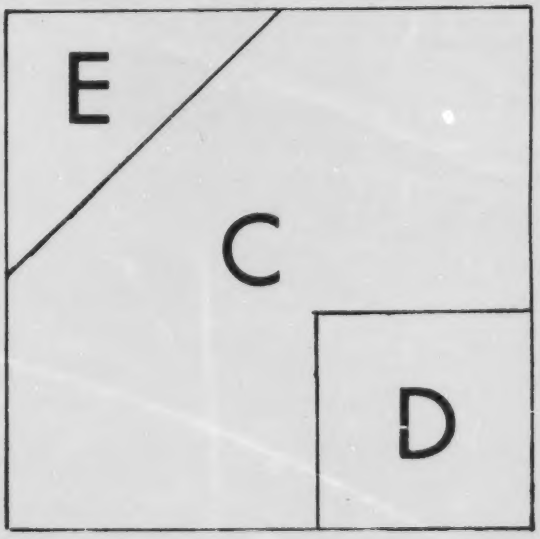
*Have students compose their own word jumbles or crossword puzzles.

KEY









ID CN DO 567

APPLICATION FOR A SOCIAL SECURITY NUMBER

DO NOT WRITE IN THE ABOVE SPACE

See Instructions on Back. Print in Block or Dark Blue Ink or Use Typewriter.

1 Print FULL NAME YOU WILL USE IN WORK OR BUSINESS (First Name) (Middle Name or Initial – If none, draw line ___) (Last Name)

2 Print FULL NAME GIVEN YOU AT BIRTH

3 PLACE OF BIRTH (City) (County if known) (State)

4 MOTHER'S FULL NAME AT HER BIRTH (Her maiden name)

5 FATHER'S FULL NAME (Regardless of whether living or dead)

6 YOUR DATE OF BIRTH (Month) (Day) (Year)

7 YOUR PRESENT AGE (Age on last birthday)

8 YOUR SEX ☐ MALE ☐ FEMALE

9 YOUR COLOR OR RACE ☐ WHITE ☐ NEGRO ☐ OTHER

10 HAVE YOU EVER BEFORE APPLIED FOR OR HAD A SOCIAL SECURITY, RAILROAD, OR TAX ACCOUNT NUMBER? ☐ NO ☐ DON'T KNOW ☐ YES (If "YES" Print STATE in which you applied and DATE you applied and SOCIAL SECURITY NUMBER if known)

11 YOUR MAILING ADDRESS (Number and Street, Apt. No., P.O. Box, or Rural Route) (City) (State) (Zip Code)

12 TODAY'S DATE

13 TELEPHONE NUMBER

14 NOTICE: Whoever, with intent to falsify his or someone else's true identity, willfully furnishes or causes to be furnished false information in applying for a social security number, is subject to a fine of not more than $1,000 or imprisonment for up to 1 year, or both.

Sign YOUR NAME HERE (Do Not Print)

TREASURY DEPARTMENT Internal Revenue Service
FORM SS-5 (2-73)

☐ RESCREEN ☐ ASSIGN ☐ DUP ISSUED

Return completed application to nearest SOCIAL SECURITY ADMINISTRATION OFFICE

Information Furnished On This Form Is CONFIDENTIAL

INSTRUCTIONS

One Number Is All You Ever Need For Social Security And Tax Purposes
Special Attention Should Be Given To Items Listed Below

Fill in this form completely and correctly. If any information is not known and is unavailable, write "unknown." Use typewriter or print legibly in dark ink.

1 Your social security card will be typed with the name you show in item 1. However, if you want to use the name shown in item 2, attach a signed request to this form.

3 If not born in the USA, enter the name of the country in which you were born.

5 If a stepfather, adopting father, or foster father is shown, include the relationship after name, for example, "John H. Jones, stepfather."

10 If you have ever before filled out an application like this for a social security, railroad, or tax number, check "yes" even if you never received your card. If you check "yes," give the name of the State and the approximate date on which you applied. Also enter your social security number if you did receive the card and remember the number. You may find your number on an old tax return, payroll slip, or wage statement.

11 If you get your mail in the country, without a street address, show your R.D. Route, and Box number, if at the post office, show your P.O. Box No.; if there is no such way of showing your mail address, show the town or post office name. If mail under your name is not normally received at the address which you show, use an "in care of" address.

14 Sign your name as usually written. Do not print unless this is your usual signature. (If unable to write, make a mark witnessed by two persons who can write. The witnesses preferably should be persons who work with the applicant and both must sign this application. A parent, guardian, or custodian who completes this form on behalf of another person should sign his own name followed by his title or relationship to the applicant, for example, "John Smith, father.")

* GPO : 1973 O - 497- 751

FOR DISTRICT OFFICE USE

567 SOCIAL SECURITY OFFICE 567
P.O. Drawer 3447
Knoxville, Tennessee 37917

FOR BUREAU OF DATA PROCESSING

APPENDIX A

VOCATIONAL PROGRAMS
ALPHABETICAL LISTING - DESCRIPTIVE INFORMATION

VOCATIONAL PROGRAMS

ALPHABETICAL LISTING - DESCRIPTIVE INFORMATION

		U.S.O.E. Code
01	Accounting and Computing	14.0104

The Accounting and Computing program provides students with beginning accounting skills. Students who complete this course will find good employment opportunities.

02	Agri-Business	01.0299

The program in Agri-Business prepares students for the business skills needed to run a farm. Students will learn how to keep farm financial records and how to sell agricultural products and supplies.

03	Agricultural Mechanics	01.0301

The Agricultural Mechanics program helps students develop the skills needed to service and repair farm machinery.

04	Air Conditioning and Refrigeration	17.0101

The Air Conditioning and Refrigeration course prepares students to service and repair cooling systems.

05	Aircraft Mechanics	17.0401

The Aircraft Mechanics program prepares students for beginning jobs in aviation mechanics. This course includes the study of airframe construction, electricity, and aircraft inspection.

06	Appliance Repair	17.0201

The Appliance Repair course trains a person to service small appliances. This could include repair work on toasters, fans, washing machines, dishwashers, and window air conditioners.

07	Automobile Body Repair	17.0301

The Automobile Body Repair course teaches a person the basic skills needed to estimate repair costs, repair bent parts and refinish auto parts.

U.S.O.E. Code

08 Automotive Mechanics 17.0302

The Automotive Mechanics program prepares students for beginning jobs in automotive repair service.

09 Cabinet Making 17.3601

The Cabinet Making program trains students for jobs in construction, industry and furniture making. Woodworking is a good background for this program.

10 Child Care and Development 09.0201

The course in Child Care and Development will prepare students for jobs in the area of child care.

11 Commercial Art 17.0799

The Commercial Art course will train students in basic drawing, lettering, color, and art design. This program lasts two or three years.

12 Commercial Photography 17.0999

The two-year program in Commercial Photography gives students skills in the use of a camera and darkrooms. The student may use these skills for a job or advanced training in photography.

13 Communication Arts - Radio & TV Broadcast None

The Communication Arts programs give students a wide background for work in the media fields. This includes careers in radio and TV broadcasting.

14 Consumer and Homemaking Education 09.0101

The Consumer and Homemaking Education course teaches students skills that are helpful for improving home and family life.

15 Cosmetology 17.2602

The Cosmetology program gives students 1,500 hours of lab experience and lessons. During this time students will learn hair styling, shampooing, manicuring and face make-up.

16 Dental Assistant 07.0101

The Dental Assistant program includes lessons and lab experiences needed for beginning jobs as dental assistants.

U.S.O.E. Code

17 Distributive Education 04.2000

Distributive Education is a program for students who plan a career in some area of market retailing or wholesaling.

18 Drafting 17.1300

The Drafting program teaches students basic drawing skills. Students will also learn drafting standards.

19 Electronics 17.1503

The Electronics course gives students skills needed to repair or replace parts on radios and television sets.

20 General Building Trades 17.1099

The General Building Trades course combines all areas of house building to teach students how to build a house. Included in the course are the areas of: carpentry, masonry, electrical wiring, plumbing and painting.

21 General Metals 17.2304

The course in General Metals prepares a person in the wide area of design and construction of metal products.

22 Health Occupations 07.9900

The Health Occupations course provides a good background for beginning jobs in the health field or for more advanced training.

23 Industrial Electricity 17.1401

The Industrial Electricity course is a three-year program. It provides students with beginning skills for work in construction and electrical maintenance.

24 Inhalation Therapy 07-0903

The Inhalation Therapy program provides training in the safe operation of inhalation equipment.

25 Instrument Mechanic 17.2101

The Instrument Mechanic course prepares people to repair and maintain automatic controls for machinery.

26 Licensed Practical Nurse 07.0302

The Licensed Practical Nurse program provides training in patient care. Students will also study the cause and control of diseases.

U.S.O.E. Code

27 Machine Shop 17.2302

The course in Machine Shop teaches the basic skills needed by a machinist for beginning jobs in industry.

28 Masonry 17.1004

The Masonry course will teach students the following skills: brick laying, plastering, tile setting, and blueprint reading.

29 Medical Laboratory Assistant 07.0203

The Medical Laboratory Assistant course prepares persons for routine work in medical laboratories. High school students interested in this program should prepare for it by taking science, math and health courses.

30 Nurse's Aide 07.0303

The Nurse's Aide program is a short course which prepares persons to assist nurses in the care of patients.

31 Occupational Home Economics 09.2000

The Occupational Home Economics program prepares students for beginning jobs in food service, textiles or child care.

32 Office Machine Repair 17.0600

The course in Office Machine Repair gives instruction in the repair of many types of office equipment.

33 Office Occupations - Bookkeeping 14.0102

The Bookkeeping program of Office Occupations prepares a person for the office job of bookkeeping.

34 Office Occupations - Business Machines 14.0399

The course in Business Machines provides classroom experiences in the use of different kinds of office machines.

35 Office Occupations - Clerical 14.0999

The Clerical program of Office Occupations will teach students filing, copying, and record keeping. This course will prepare students for beginning jobs in clerical work.

36 Office Occupations - Data Processing 14.0299

The program in Data Processing teaches students beginning skills in data processing. Students will learn the use of computers, key punching, card sorting and basic programming.

		U.S.O.E. Code
37	Office Occupations - Secretarial	14.0702

The Secretarial program teaches students the skills and knowledge needed for beginning secretarial jobs.

38	Operating Room Technician	07.0305

The course work in Operating Room Technician teaches students the skills needed to work as a member of an operating room team.

39	Ornamental Horticulture	01.0599

The Horticulture course prepares a person for work in a greenhouse, nursery, or landscaping business.

40	Printing	17.1902

The purpose of the Printing program is to prepare students for beginning jobs in the printing field.

41	Quantity Foods	17.2999

The two-year Quantity Foods or Commercial Foods program gives students training in the preparation and serving of foods in large amounts.

42	Radio and TV Repair	17.1503

The program in Radio and TV Repair teaches the skills needed to repair radios and televisions.

43	Service Station Attendant	17.0399

The Service Station Attendent program trains students for the operation of a service station. Students will learn the skills needed to service cars and trucks.

44	Sheet Metal	17.2305

The Sheet Metal course teaches students the skills needed to design and construct sheet metal products.

45	Small Gasoline Engine Repair	17.3100

The Small Gasoline Engine Repair course prepares students to service and repair engines. Students will work with 1 H.P. to 12 H.P. size engines.

		U.S.O.E. Code
46	Tailoring	17.3302

The Tailoring program provides students with skills for beginning tailoring jobs. Students will study the following: history of tailoring, use of tailoring tools, fabrics, use of patterns, and tailoring of garments.

47	Tool and Die Making	17.2307

In the Tool and Die Making course students will learn how to make new dies, repair old dies, and make and repair hand tools.

48	Watchmaking	17.2102

The Watchmaking course includes the study of watchmaking and repair work on watches and clocks.

49	Welding	17.2306

The Welding program gives training needed for beginning jobs in the welding industry.

50	Vocational Agriculture	01.0100

The Vocational Agriculture course gives students a basic background in the field of agriculture. Students will study farm management, agri-mechanics, care and breeding of animals, and care of plants.

APPENDIX B

INTEREST INVENTORIES FOR
GRADES SEVEN, EIGHT AND NINE

DIRECTIONS FOR "I AM INTERESTED IN . . ."

1. Read each of the statements on the "I Am Interested In . . ." sheet.

2. Make a check in the "yes" circle beside the statement if it tells something you are interested in.

3. Make a check in the "no" circle beside the statement if it tells something you are not interested in.

4. Place a check in all the circles under the columns to the right for any statement for which you check "yes".

5. Add the number of checks in each column and put this number in the "totals" box at the bottom of the page under each column.

6. The first column in which you receive the largest number of checks identifies the cluster you will begin with in exploring INFOE.

7. The column numbers stand for the clusters as identified below:

7th Grade

01 Agri-Business and Natural Resources

02 Business and Office

03 Communications and Media

04 Construction

8th Grade

08 Health

12 Marketing and Distribution

14 Public Services

15 Transportation

9th Grade

01 Agri-Business and Natural Resources

02 Business and Office

03 Communications and Media

04 Construction

08 Health

12 Marketing and Distribution

14 Public Services

15 Transportation

INTEREST INVENTORY
FOR SEVENTH GRADE

I AM INTERESTED IN . . .

	YES	NO	CLUSTERS 01	02	03	04
1. working outdoors	○	○	○			○
2. working with animals	○	○	○			
3. working with other people	○	○		○	○	
4. working with tools	○	○			○	○
5. building things	○	○				○
6. reading	○	○			○	
7. working indoors	○	○		○		
8. talking with people	○	○		○		
9. following instructions	○	○		○		
10. working with math problems	○	○		○		
11. working with my hands	○	○	○			
12. working with machines	○	○	○			○
13. fixing things	○	○				○
14. writing	○	○			○	
15. growing things	○	○	○			
16. drawing pictures	○	○			○	
TOTALS						

The number of the column which I received the largest number of checks in is _____

INTEREST INVENTORY
FOR EIGHTH GRADE

I AM INTERESTED IN . . .

	YES	NO	CLUSTERS			
			08	12	14	15
1. helping other people	○	○	○		○	
2. working indoors	○	○	○	○		
3. working with other people	○	○		○	○	
4. working with machines	○	○				○
5. repairing things	○	○				○
6. working with tools	○	○				○
7. reading about new things	○	○	○			
8. following instructions	○	○	○			
9. working with numbers	○	○		○		
10. planning ahead	○	○		○		
11. talking to people	○	○		○	○	
12. meeting other people	○	○			○	
13. traveling	○	○				○
14. helping people with their health needs	○	○	○			
15. working with my hands	○	○				○
16. providing a service for others	○	○			○	
TOTALS						

The number of the column which I received the largest number of checks in is _____

INTEREST INVENTORY FOR NINTH GRADE

I AM INTERESTED IN . . .	YES	NO	CLUSTER NUMBER							
			01	02	03	04	08	12	14	15
1. working outdoors	○	○	○			○				
2. working with other people	○	○		○				○	○	
3. working with machines	○	○	○			○				○
4. working with numbers	○	○		○				○		
5. following instructions	○	○		○			○			
6. working indoors	○	○		○			○	○		
7. working with animals	○	○	○							
8. helping others	○	○					○		○	
9. traveling	○	○								○
10. working with my hands	○	○	○		○		○			○
11. growing things	○	○	○							
12. talking with others	○	○		○				○	○	
13. reading	○	○			○					
14. helping people with their health needs	○	○					○			
15. writing	○	○			○					
16. building things	○	○				○				
17. providing a service for others	○	○							○	
18. working with tools	○	○			○	○				○
19. repairing things	○	○				○			○	○
20. organizing and planning ahead	○	○			○			○		
TOTALS										

APPENDIX C

INVENTORIES OF CAREER CLUSTERS
AND JOB TITLES
FOR SEVENTH GRADE STUDENTS

INVENTORY OF SEVENTH GRADE CAREER CLUSTERS
AND JOB TITLES

CLUSTER 01 - AGRI-BUSINESS AND NATURAL RESOURCES

___ 01-00 Cluster Description

___ 01-01 Agriculture Commodity Grader

___ 01-02 Agriculture Engineering Technician

___ 01-03 Biologist

___ 01-04 Commercial Nursery Worker

___ 01-05 County-Agricultural Agent

___ 01-06 Farm Equipment Mechanic

___ 01-07 Farmer

___ 01-08 Feed Mill Operator

___ 01-09 Forestry Aide

___ 01-10 General Farm Hand

___ 01-11 Geologist

___ 01-12 Grain and Feed Product Sales Person

___ 01-13 Horseshoer

___ 01-14 Landscape Gardener

___ 01-15 Livestock Caretaker

___ 01-16 Lumber Grader

___ 01-17 Miner

___ 01-18 Mines Safety Inspector

___ 01-19 Park Naturalist

___ 01-20 Plant and Animal Quarentine Inspector

___ 01-21 Quarry Worker

___ 01-22 Soil Technologist

___ 01-23 Veterinarian Assistant

___ 01-24 Wildlife Officer

CLUSTER 02 - BUSINESS AND OFFICE

___ 02-00 Cluster Description

___ 02-01 Accountant

___ 02-02 Administrative Assistant

___ 02-03 Assistant Manager, Retail Apparel

___ 02-04 Audit Clerk

___ 02-05 Bank Teller

___ 02-06 Billing Machine Operator

___ 02-07 Bookkeeper

___ 02-08 Clerk Typist

___ 02-09 Computer Operator

___ 02-10 Computer Programmer

___ 02-11 Data Typist

___ 02-12 File Clerk

___ 02-13 General Secretary

___ 02-14 Insurance Adjuster

___ 02-15 Key-Punch Operator

___ 02-16 Loans Officer

___ 02-17 Office Machine Service Worker

___ 02-18 Personnel Manager

___ 02-19 Public Relations Worker

___ 02-20 Receptionist

___ 02-21 Recruiter

___ 02-22 Safe-Deposit Clerk

___ 02-23 Stenographer

___ 02-24 Systems Analyst

CLUSTER 03 - COMMUNICATIONS & MEDIA

___ 03-00 Cluster Description

___ 03-01 Apprentice Offset Press Printer

___ 03-02 Cable Splicer

___ 03-03 Classified Ad Clerk

___ 03-04 Columnist

___ 03-05 Copy Reader

___ 03-06 Disk Jockey

___ 03-07 Film Editor

___ 03-08 Foreign Correspondent

___ 03-09 Information Operator

___ 03-10 Make-Up Artist

___ 03-11 Motion Picture Projectionist

___ 03-12 Newspaper Reporter

___ 03-13 PBX Operator

___ 03-14 Prop Maker

___ 03-15 Radio & TV Controlroom Technician

___ 03-16 Radio & TV Script Assistant

___ 03-17 Radio & TV Service and Repair Worker

___ 03-18 Radio Dispatcher

___ 03-19 Sound Cutter

___ 03-20 Telephone Line Worker

___ 03-21 Telephone Service Representative

___ 03-22 Telephone Station Installer

___ 03-23 Teletype Operator

___ 03-24 Television Camera Operator

CLUSTER 04 - CONSTRUCTION

___ 04-00 Cluster Description

___ 04-01 Air Hammer Operator

___ 04-02 Apprentice Equipment Mechanic

___ 04-03 Architect Assistant

___ 04-04 Asphalt-Paving Machine Operator

___ 04-05 Brick Layer

___ 04-06 Building Inspector

___ 04-07 Bulldozer Operator

___ 04-08 Cabinetmaker

___ 04-09 Carpenter

___ 04-10 Cement Mason

___ 04-11 Civil Engineer

___ 04-12 Construction Electrician

___ 04-13 Construction Materials Equipment Sales Person

___ 04-14 Drafting Worker

___ 04-15 Dry-Wall Applicator

___ 04-16 Electrical Repair Worker

___ 04-17 Engineering Aide

___ 04-18 Finish Carpenter

___ 04-19 Glazier

___ 04-20 Painter

___ 04-21 Plumber

___ 04-22 Sheet Metal Worker

___ 04-23 Surveyor

___ 04-24 Welder

APPENDIX D

WORD JUMBLE AND CROSSWORD PUZZLE
FOR SEVENTH GRADE STUDENTS

04 CONSTRUCTION CLUSTER

1.	_ E _ _ _ _	EEWLRD
2.	_ _ _ C _ _ _ Y _ _	IRKCB YAELR
3.	_ _ I _ _ _ _	IANPRET
4.	_ _ _ _ _ Y _ _	YORRUVSE
5.	_ L _ _ _ _ _	MULPBRE
6.	_ E _ _ _ _ M _ _ _ _	MEECTN SNOMA
7.	_ _ _ _ _ _ T _ _	RTEERPNAC
8.	_ _ _ I _ _ _ _ _ _ E _ _	LIICV EEENNGRI
9.	S _ _ _ _ _ _ _ _ L _ _ _ K _ _	EESTH LATME RREOWK
10.	_ L _ _ _ _ _	ZIARLGE
11.	_ _ _ _ _ _ T _ _ _ _ _	ECBTINAKMARE
12.	_ _ _ _ T _ _ _ _ _ _ _ _ R	TNDARFGI OKRWRE
13.	_ _ _ I _ _ _ _ _ P _ _ _ _ _	IINHFS PEERRNTCA
14.	_ _ _ _ D _ _ _ _ _ _ _ _ _ T _ _	LUDZOBREL OORRPTEA
15.	_ I _ _ _ _ M _ _ _ P _ _ _ _ _ _	RAI RMAHME PTEORAOR

AIR HAMMER OPERATOR

BRICK LAYER

BULLDOZER OPERATOR

CABINETMAKER

CARPENTER

CEMENT MASON

CIVIL ENGINEER

DRAFTING WORKER

FINISH CARPENTER

GLAZIER

PAINTER

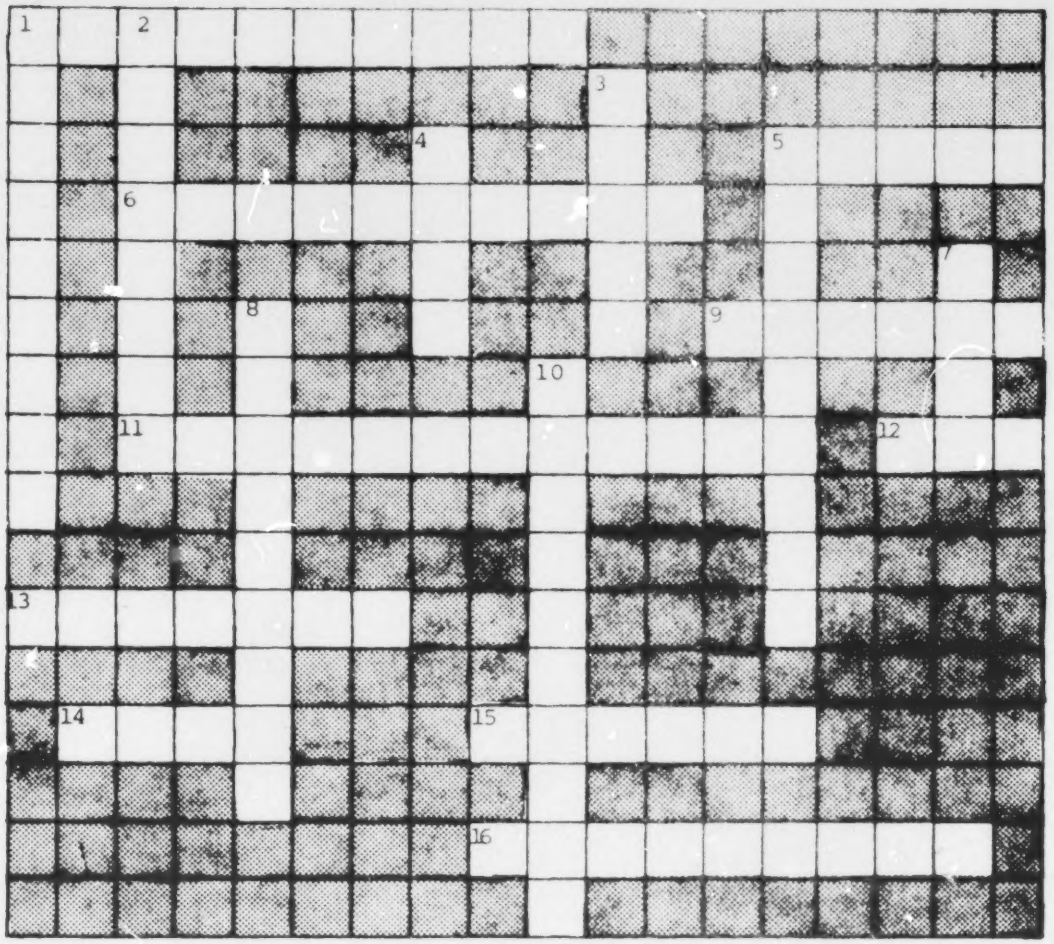
PLUMBER

SHEET METAL WORKER

SURVEYOR

WELDER

BUSINESS AND OFFICE CLUSTER



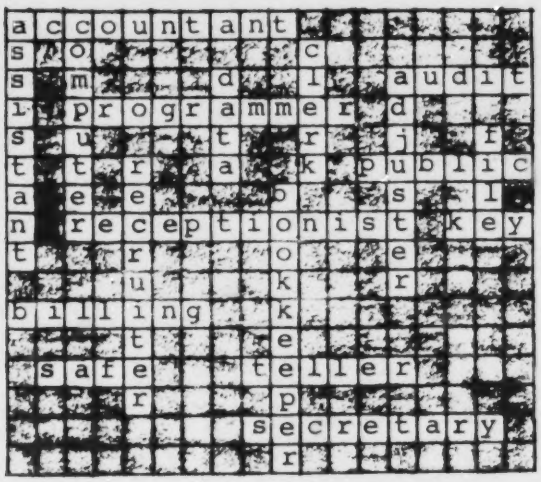
ACROSS

1. An _____ keeps track of money for businesses and the government.
5. An _____ clerk checks the financial records of a business
6. A computer _____ gives instructions to computers.
9. _____ Relations Workers help businesses develop good "images".
11. Person who greets people when they enter an office
12. A ___-punch operator works with a machine that changes information into cards or tapes.
13. _____ machine operators prepare statements and bills.
14. _____-deposit clerks rent storage boxes to bank customers.
15. A bank _____ cashes checks and makes deposits for customers.
16. A general _____ does office clerical work.

DOWN

1. An administrative _____ helps executives run business offices.
2. A _____ operator runs a complex electronic machine.
3. _____ typists type and keep records straight.
4. _____ typists type code cards for computers.
5. Insurance _____ figure the amount of damage to people and property.
7. _____ clerks store records and reports
8. A _____ interviews job applicants.
10. Keeps office records.

Solution to Crossword Puzzle on Page 76.



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APPENDIX E

INVENTORIES OF CAREER CLUSTERS
AND JOB TITLES
FOR EIGHTH GRADE STUDENTS

INVENTORY OF EIGHTH GRADE CAREER CLUSTERS
AND JOB TITLES

CLUSTER 08 - HEALTH

___ 08-00 Cluster Description

___ 08-01 Admitting Clerk

___ 08-02 Ambulance Driver

___ 08-03 Audiologist

___ 08-04 Central Supply Aide

___ 08-05 Dental Assistant

___ 08-06 Dental Hygienist

___ 08-07 Dental Laboratory Technician

___ 08-08 Dietition Technician

___ 08-09 Inhalation Therapy Technician

___ 08-10 Licensed Practical Nurse

___ 08-11 Medical Assistant

___ 08-12 Medical Laboratory Assistant

___ 08-13 Nurse's Aide

___ 08-14 Occupational Therapist

___ 08-15 Operating Room Technician

___ 08-16 Ophthalmic Lens Grinder

___ 08-17 Orthopedic Technician

___ 08-18 Pharmacy Helper

___ 08-19 Physical Therapist Assistant

___ 08-20 Psychiatric Technician

___ 08-21 Radiologic Technologist

___ 08-22 Registered Nurse

___ 08-23 Speech Therapist

___ 08-24 Veni-Puncture Specialist

CLUSTER 12 - MARKETING AND DISTRIBUTION

___ 12-00 Cluster Description

___ 12-01 Actuary

___ 12-02 Advertising Sales Person

___ 12-03 Apprentice Exhibit Fabricator

___ 12-04 Assistant Buyer

___ 12-05 Auctioneer

___ 12-06 Cashier

___ 12-07 Catalog Order Clerk

___ 12-08 Coin-Vending Machine Operator

___ 12-09 Credit Analyst

___ 12-10 Credit Manager

___ 12-11 Department Store Sales Person

___ 12-12 Display Artist

___ 12-13 Furniture Sales Person

___ 12-14 Grocery Clerk

___ 12-15 Importer-Exporter

___ 12-16 Insurance Agent

___ 12-17 Jeweler

___ 12-18 Market Research Assistant

___ 12-19 Packaging Worker

___ 12-20 Real Estate Sales Person

___ 12-21 Shipping and Receiving Clerk

___ 12-22 Stock Broker

___ 12-23 Stock Clerk

___ 12-24 Warehouse Worker

CLUSTER 14 - PUBLIC SERVICES

___ 14-00 Cluster Description

___ 14-01 Armed Forces

___ 14-02 Child Day Care Aide

___ 14-03 Deputy Sheriff

___ 14-04 F.B.I. Special Agent

___ 14-05 Fire Fighter

___ 14-06 Garbage Truck Driver

___ 14-07 Gas Plant Operator

___ 14-08 Guidance Counselor

___ 14-09 Junior Federal Assistant

___ 14-10 Kindergarten Teacher

___ 14-11 Law Enforcement Clerk

___ 14-12 Library Assistant

___ 14-13 Mail Carrier

___ 14-14 Meter Reader

___ 14-15 Paralegal Aide

___ 14-16 Peace Corps Volunteer

___ 14-17 Public Works Inspector

___ 14-18 Post Office Clerk

___ 14-19 Probation & Parole Counselor

___ 14-20 Rehabilitation Counselor

___ 14-21 Social Worker

___ 14-22 State Trooper

___ 12-23 Teacher Aide

___ 12-24 Trade and Industrial Education Teacher

CLUSTER 15 - TRANSPORTATION

___ 15-00 Cluster Description

___ 15-01 Air Traffic Controller

___ 15-02 Aircraft Fuel Service Mechanic

___ 15-03 Aircraft Structure Assembler

___ 15-04 Airframe and Power Plant Mechanic

___ 15-05 Airline Flight Attendent

___ 15-06 Airline Pilot and Co-Pilot

___ 15-07 Airline Ticket Agent

___ 15-08 Auto Body Repair Worker

___ 15-09 Auto Mechanic

___ 15-10 Auto Painter

___ 15-11 Auto Sales Person

___ 15-12 Auto Upholsterer

___ 15-13 Aviation Maintenance Inspector

___ 15-14 Car Rental Representative

___ 15-15 Intercity Bus Driver

___ 15-16 Long-Haul Truck Driver

___ 15-17 Longshore Worker

___ 15-18 Motorcycle Mechanic

___ 15-19 Pump Worker

___ 15-20 Railroad Locomotive Engineer

___ 15-21 School Bus Driver

___ 15-22 Service Station Attendent

___ 15-23 Taxicab Driver

___ 15-24 Traffic Rate Clerk

APPENDIX F

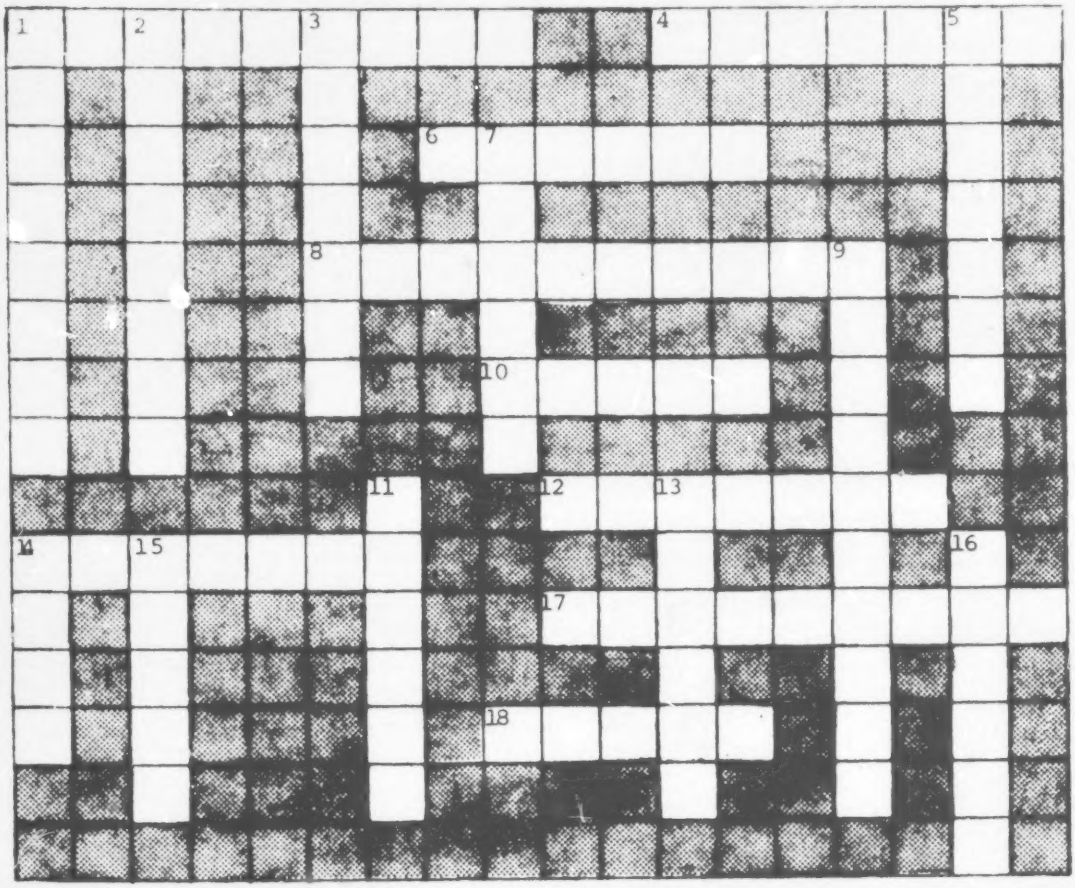
WORD JUMBLE AND CROSSWORD PUZZLE
FOR EIGHTH GRADE STUDENTS

15 TRANSPORTATION CLUSTER

1.	_ _ _ O _ _ _ U _ _ _ _ _ _ R	CHOOLS UBS RREIDV
2.	_ _ _ L _ _ _ _ _ L _ _	ENARLII ITOPL
3.	_ _ _ _ _ _ E _ _ I _ _ _	
	_ _ T _ _ _ _ _ _	RENLAII HIFLGT TTTDNAEAN
4.	_ _ M _ _ _ _ K _ _	MUPP EKOWRR
5.	_ R _ _ _ _ _ _ A _ _ _ _ E _ _	IFARTFC EART ELCKR
6.	_ U _ _ _ _ _ _ S _ _ R _ _ _	TAUO ESASL ESPONR
7.	_ U _ _ _ _ I _ _ _ _	TOUA APITNRE
8.	_ _ _ E _ _ _ _ _ _ _ U _	
	_ _ _ _ _ R	ICETNIRYT SUB RVIRDE
9.	_ O _ _ _ _ _ _ _ _ _ R _ _ _	EOSGOLNHR ORREWK
10.	A _ _ _ _ _ _ O _ _ _ _ _ _ _ _	OUTA PUHLSOETRRE
11.	_ I _ _ _ A _ _ _ _	
	_ O _ _ _ _ _ _ _ _ _	RIA FARTFIC ONTCORLLRE
12.	_ _ _ _ _ _ A _ _ R _ _ _ _	AIABCXT RVREDI
13.	_ O _ _ _ _ _ _ _ _ _ _ _ _ A _ _ _	OTOYMRCCLE EHNCMCAI
14.	_ _ _ _ I _ _ _ I _ _ _ _	
	_ _ E _ _	LIARNIE KITCTE NEAGT
15.	_ _ T _ _ _ _ _ A _ _ _	TUOA IEMNACHC

AIR TRAFFIC CONTROLLER
AIRLINE FLIGHT ATTENDANT
AIRLINE PILOT
AIRLINE TICKET AGENT
AUTO MECHANIC
AUTO PAINTER
AUTO UPHOLSTERER
AUTO SALES PERSON
INTERCITY BUS DRIVER
LONGSHORE WORKER
MOTORCYCLE MECHANIC
PUMP WORKER
SCHOOL BUS DRIVE
TAXICAB DRIVER
TRAFFIC RATE CLERK

12 MARKETING AND DISTRIBUTION CLUSTER



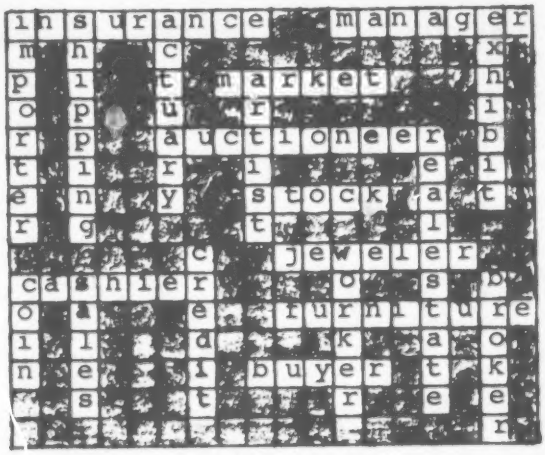
ACROSS

1. ___ agents sell protection against fire, accidents, death, etc.
4. A credit ___ is responsible for giving credit to suctomers.
6. A ____ research assistant does research on economic trends and consumer buying habits.
8. An ___ takes bids for itmes at an auction.
10. ____ clerks receive, store, and issue supplies.
12. A ____ makes, repairs, and sells jewelry.
14. Receives money from customers for payments.
17. ___ sales people sell household items.
18. An assistant ___ is a retail store trainee

DOWN

1. An ___-exporter brings goods to this country to sell in stores.
2. ___ & receiving clerks keep records of supplies.
3. Figures insurance risks.
5. An apprentice ___ fabricator is learning to build displays.
7. A display ____ arranges merchandise in store.
9. ____ ____ sales people sell property.
11. ____ analysts check risks in lending money to people.
13. A packaging ____ prepares products for sale or shipment.
14. ___-vending machine mechanics work on vending machines.
15. Advertising ___ people sell air time for advertisements.
16. A stock ___ buys and sells stocks and bonds.

Solution to Crossword Puzzle on Page 85.


insurance manager
m h c x
p l t market h
c p u r i
r p auctioneer b
t l r i e i
e n y stock a t
r g t l
c jeweler
cashier o s b
o a e furniture
l l d k a o
n e i buyer t k
s t r e e
r

APPENDIX G

WORD JUMBLE AND CROSSWORD PUZZLE
FOR NINTH GRADE STUDENTS

SELECTIONS FROM ALL EIGHT CLUSTERS FOR 9TH GRADE

1.	_ _ _ _ _ _ _	UMLBREP
2.	_ _ _ _ _ _ _ _ _	SILUNCOMT
3.	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _	YAARPHMC PLELHR
4.	_ _ _ _ _ _ _ _ _ _ _ _	KCOST RREOBK
5.	_ _ _ _ _ _ _ _ _	MIFL IEDTRO
6.	_ _ _ _ _ _ _ _ _ _ _ _ _	EERCIIOSTTPN
7.	_ _ _ _ _	RINME
8.	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	LTENDA GIIESTHYN
9.	_ _ _ _ _ _ _ _ _ _ _ _ _	TEPDUY FIHSRFE
10.	_ _ _ _ _ _ _ _ _ _ _ _ _ _	OLSHOC UBS IVRDRE
11.	_ _ _ _ _ _ _ _ _ _ _	YUQARR KORWRE
12.	_ _ _ _ _ _ _ _ _ _	EEMTR RREEDA
13.	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	CITTCERAH TTSSSAAIN
14.	_ _ _ _ _ _ _ _ _ _ _	TUOA INTREPA
15.	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	MPCORTEU MPRRGOREAM
16.	_ _ _ _ _ _ _ _ _ _ _ _	EDTRCI NAAERGM

ARCHITECT ASSISTANT

AUTO PAINTER

COLUMNIST

COMPUTER PROGRAMMER

CREDIT MANAGER

DENTAL HYGIENIST

DEPUTY SHERIFF

FILM EDITOR

METER READER

MINER

PHARMACY HELPER

PLUMBER

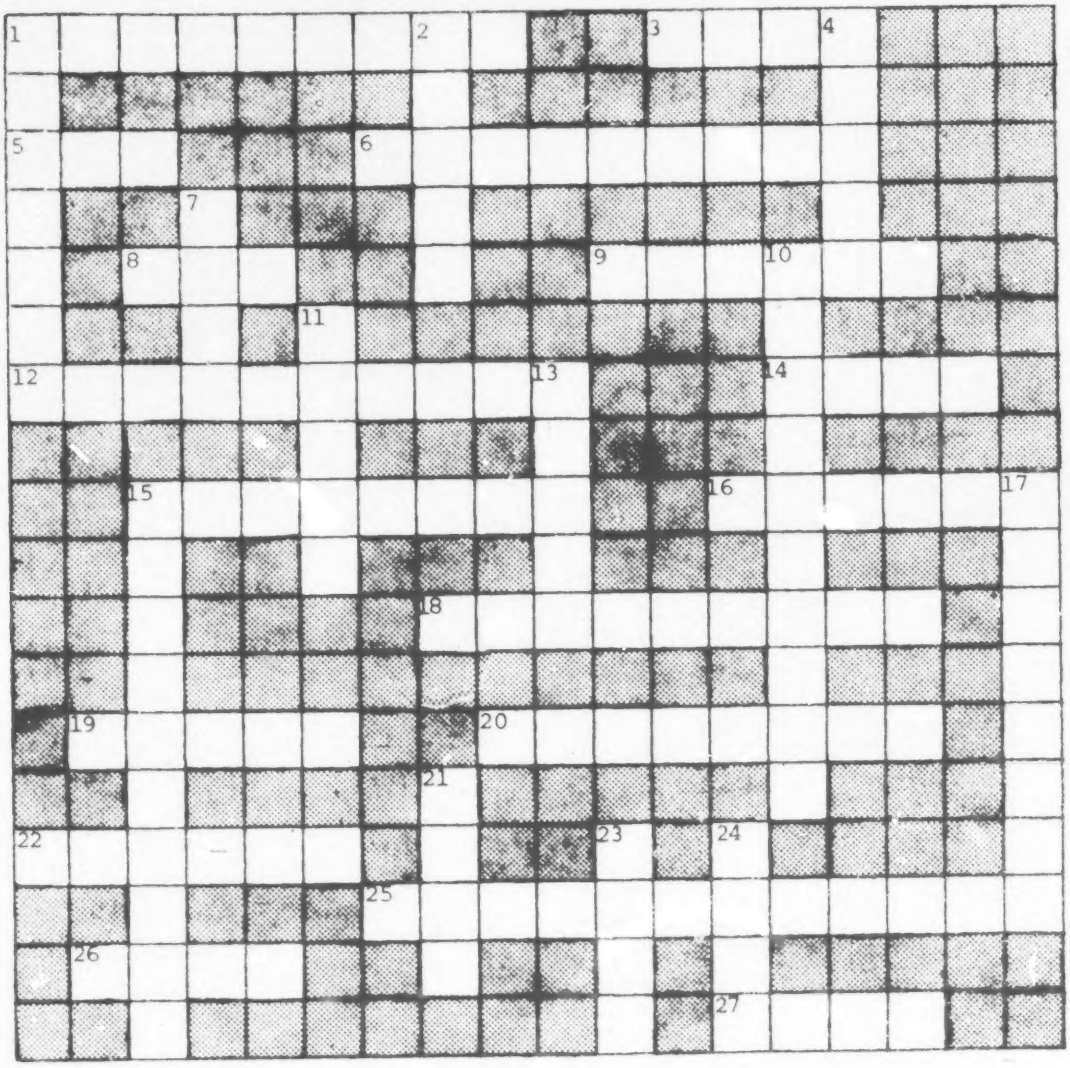
QUARRY WORKER

RECEPTIONIST

SCHOOL BUS DRIVER

STOCK BROKER

NINTH GRADE CLUSTER PUZZLE



ACROSS

1. Examines soils and rocks.
3. A ___ typist types code cards for computers.
5. An ___-hammer operator uses a machine to break up hard surfaces.
6. ___ workers transfer cargo in dock warehouses.
8. ___-punch operators type cards and tapes for computers.
9. Real___ sales people sell property.
12. A ___ technologist runs x-ray machines.
14. ___ readers correct newspapers before they are printed.
15. A gas plant ___ controls plant equipment.
16. ___ relations workers promote good company "images".
18. A mines safety ___ promotes good mining practices.
19. ___ metal workers cut and shape metal.
20. A landscape ___ arranges outdoor plants.
22. Joins pieces of metal together.
25. Takes dictation in shorthand.
26. ___ jockeys play music for radio stations.
27. A ___ naturalist plans plant and animal exhibits.

(DOWN con't. on reverse)

DOWN

1. Cuts and installs glass.
2. ___ clerks receive and issue company supplies.
4. An insurance ___ sells insurance policies.
7. ___-puncture specialists draw blood samples from patients.
10. Keeps track of money for businesses and the government.
11. An audit ___ checks financial records for businesses.
13. Peace ___ volunteers help people in underdeveloped countries.
15. ___ lens grinders make eyeglass lens.
17. ___ operators run complex electronic machines.
21. ___ painters repaint vehicles that have lost their original color.
23. ___ technologists work with landowners to improve the land.
24. ___ makers build stage sets.

Solution to Crossword Puzzle on Page 89.